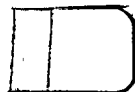
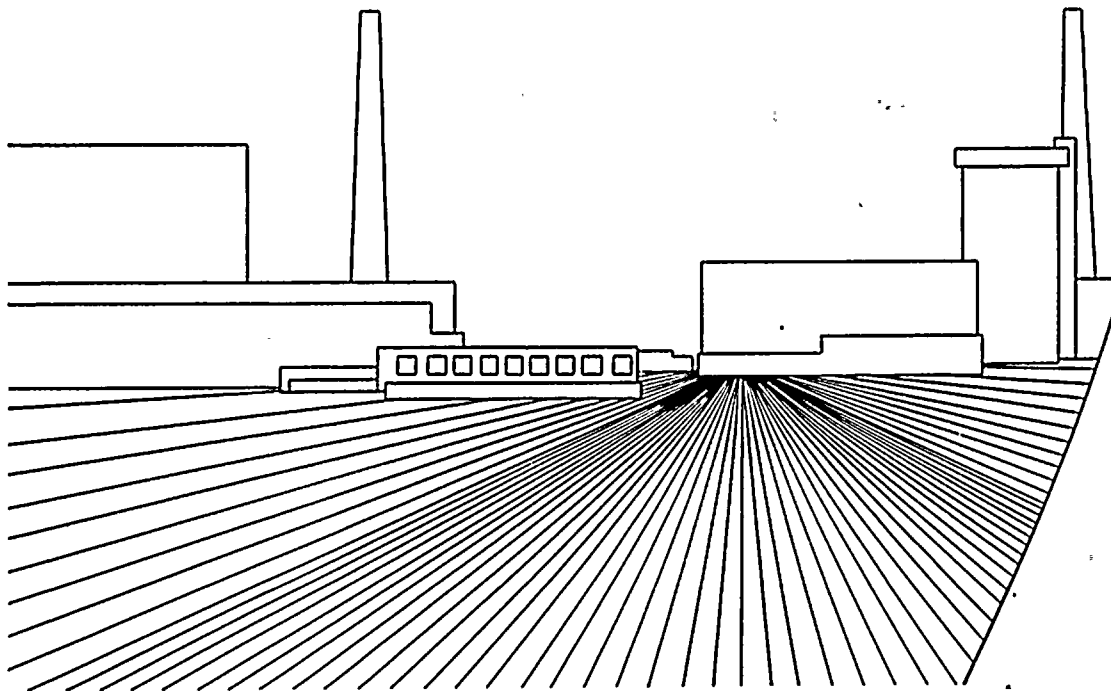


# ENVIRONMENTAL QUALIFICATION DOCUMENT

NINE MILE POINT  
NUCLEAR STATION — UNIT 2

NM NIAGARA  
M MOHAWK





## Nine Mile Point Unit 2 EQD

### INSERTION INSTRUCTIONS

The following instructions are for the insertion of the revised Nine Mile Point Unit 2 EQD.

Remove pages, tables, and/or figures listed in the REMOVE column and replace them with the pages, tables, and/or figures listed in the INSERT column. Dashes (---) in either column indicate no action required.

Vertical bars have been placed in the margins of inserted pages and tables to indicate revision locations.

Blue sheets are provided to designate the Appendix/Volume and should be discarded following insertion.





Nine Mile Point Unit 2 EQD

INSERTION INSTRUCTIONS

VOLUME 1

Remove

Insert

i/ii

i/ii

T 2-1

T 2-1

T 2-2

T 2-2

4-9/4-9a

4-9/4-9a

5-1/5-2

5-1/5-2

6-1/6-2

6-1/6-2

All existing Appendix A  
after Appendix A tab to  
end of section

New Appendix A

All existing Appendix B  
after BOP tab to end  
of volume

New Appendix B



Nine Mile Point Unit 2 EQD

INSERTION INSTRUCTIONS

VOLUME 2

Remove

All material after  
BOP tab to end  
of volume

Insert

New Appendix B



Nine Mile Point Unit 2 EQD

INSERTION INSTRUCTIONS

VOLUME 3

Remove

All existing Appendix B after  
Appendix B tab to end of section

All existing NSSS after  
NSSS tab to end of volume

Insert

New Appendix B

New NSSS



Nine Mile Point Unit 2 EQD

INSERTION INSTRUCTIONS

VOLUME 4

Remove

All existing Appendix C after  
Appendix C tab to end of section

All existing Appendix D after  
Appendix D tab to end of section

Insert

New Appendix C

New Appendix D





# Nine Mile Point Unit 2 EQD

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5-1B	NMP-2 Environmental Qualification Data Master List (NSSS)
5-2	Operability Codes

### LIST OF FIGURES

<u>Figure No.</u>	<u>Title</u>
5-1	DELETED

Nine Mile Point Unit 2 EQD

TABLE 2-1

HARSH ENVIRONMENT ZONES CONTAINING SAFETY-RELATED ELECTRICAL EQUIPMENT

```

~~~~~
ABN17503      MST28948      PC261207      PC328185      SC215129      SC328193
ABN17504      MST28949      PC261638      RB240218      SC215130      SC328197
ABN17505      PC215121      PC261641      SC175102      SC215132      SC328199
ABN17506      PC240601      PC261643      SC175103      SC240135      SC328221
ABN19614      PC240603      PC261644      SC175105      SC240136      SC353202
ABN19615      PC240606      PC261647      SC175106      SC240137      SG261355
ABN21523      PC240607      PC261649      SC175108      SC240138      SG261356
ABN24031      PC240608      PC289679      SC175109      SC240140      TB289761
ABN24033      PC240609      PC289680      SC175111      SC240142      TB306780
ABS17508      PC240612      PC289681      SC196113      SC240143      YD261790
ABS17509      PC250619      PC289682      SC196114      SC261145
ABS17510      PC250620      PC289683      SC196116      SC261150
ABS17511      PC250621      PC289685      SC196117      SC289155
ABS19620      PC250623      PC289686      SC196118      SC289161
ABS24036      PC250624      PC297691      SC196120      SC289162
CB289392      PC250625      PC299697      SC215122      SC306175
CB306326      PC250627      PC299699      SC215123      SC306176
MST24045      PC250628      PC306711      SC215125      SC306179
MST26146      PC250629      PC306712      SC215127      SC306181
MST26147      PC250630      PC306713      SC215128      SC328187

```



Nine Mile Point Unit 2 EQD

TABLE 2-2

MILD ENVIRONMENT PLANT ZONES

~~~~~

|          |          |          |          |          |
|----------|----------|----------|----------|----------|
| ASB24053 | CB261277 | CB274391 | CB306325 | ET215244 |
| ASB24054 | CB261279 | CB289296 | DG261330 | ITK23490 |
| CB215258 | CB261280 | CB289297 | DG261331 | ITK23491 |
| CB215259 | CB261281 | CB289298 | DG261332 | MS261752 |
| CB215305 | CB261282 | CB289301 | DG261333 | SW224365 |
| CB215306 | CB261283 | CB289393 | DG261334 | SW224366 |
| CB215307 | CB261284 | CB289394 | DG261335 | SW250364 |
| CB237261 | CB261286 | CB289395 | DG272337 | SW261367 |
| CB237265 | CB261289 | CB306310 | DG272338 | SW261368 |
| CB237266 | CB261290 | CB306311 | DG272339 | TB306782 |
| CB237267 | CB261292 | CB306312 | DG272340 | TB306783 |
| CB237272 | CB261293 | CB306313 | DG272341 | YD261792 |
| CB237273 | CB261294 | CB306314 | DG272342 | YD409793 |
| CB237274 | CB261295 | CB306315 | ET215240 | YD440794 |
| CB261275 | CB274389 | CB306317 | ET215241 |          |
| CB261276 | CB274390 | CB306321 | ET215243 |          |



## Nine Mile Point Unit 2 EQD

For a zone to be classified as mild, the total integrated dose for 40 yr plus 100 days post-accident service is no more than  $10^4$  rads and generally less than  $10^3$  rads. This value is conservative since organic compounds with the least radiation resistance have damage thresholds greater than  $10^4$  rads. Most electronic components have a threshold damage level above  $10^4$  rads. Semiconductors, in particular, metal oxide semiconductor (MOS) devices, have a threshold damage level in the range of  $10^3$  to  $10^4$  rads. N-channel metal oxide semiconductor (NMOS) devices are most vulnerable to radiation damage; the failure dose can be as low as  $10^3$  rads (Si)<sup>(11)</sup>. The damage is usually caused by total dose gamma radiation. No damage was identified due to beta radiation. Semiconductor devices are resistant to beta radiation since they are sealed in molded plastic, ceramic-to-metal, or glass-to-metal packages. Neutron radiation may cause damage in semiconductor devices; however, there is no neutron radiation in mild environment zones. Dose rate thresholds are higher than total dose damage threshold levels. The lowest threshold for dose rate upset is  $10^5$  rads (Si)/s for silicone-controlled rectifiers, and dose rate damage occurs above  $10^6$  rads (Si)/s<sup>(11)</sup>. Since the maximum dose rate for these zones is much lower than the above threshold levels, no transient or permanent failures will occur in any mild environment zones due to dose rate effects.

Radiation effects on the above conditions in a mild environment are considered negligible because the calculated radiation doses for mild environment zones are less than  $10^4$  rads.

The radiation required to produce one rad in silicon (Si) is 1.15 R in the energy range of 0.5 to 1.0 Mev<sup>(12)</sup>. Therefore, semiconductor devices, including MOS devices, are considered qualified for a specified radiation dose of  $10^3$  rads.

Equipment located in mild environment zones which exceed  $10^3$  rads were reviewed to identify equipment that contains electronic components. These were qualified based on approved vendor qualification reports which envelope the specific radiation exposure.

Equipment located in the zones listed in Table 2-2 are not exposed to environmental conditions that may cause common mode failures due to environmental conditions during DBE. Immediate access following a DBE is not required other than normal and periodic maintenance. Therefore, these plant zones may be considered mild environment areas.

## Nine Mile Point Unit 2 EQD

### 4.2.1 BOP Equipment Mild Environment Qualification Program

Safety-related equipment located in a mild environment meeting the following requirements is considered adequately qualified.

1. A Certificate of Compliance (C of C) stating that the functional requirements of the equipment subjected to the specified Unit 2 environmental conditions have been met.
2. The C of C shall identify the supplied equipment by equipment mark number.



## Nine Mile Point Unit 2 EQD

For a zone to be classified as mild, the total integrated dose for 40 yr plus 100 days post-accident service is no more than  $10^4$  rads and generally less than  $10^3$  rads. This value is conservative since organic compounds with the least radiation resistance have damage thresholds greater than  $10^4$  rads. Most electronic components have a threshold damage level above  $10^4$  rads. Semiconductors, in particular, metal oxide semiconductor (MOS) devices, have a threshold damage level in the range of  $10^3$  to  $10^4$  rads. N-channel metal oxide semiconductor (NMOS) devices are most vulnerable to radiation damage; the failure dose can be as low as  $10^3$  rads (Si)<sup>(11)</sup>. The damage is usually caused by total dose gamma radiation. No damage was identified due to beta radiation. Semiconductor devices are resistant to beta radiation since they are sealed in molded plastic, ceramic-to-metal, or glass-to-metal packages. Neutron radiation may cause damage in semiconductor devices; however, there is no neutron radiation in mild environment zones. Dose rate thresholds are higher than total dose damage threshold levels. The lowest threshold for dose rate upset is  $10^5$  rads (Si)/s for silicone-controlled rectifiers, and dose rate damage occurs above  $10^6$  rads (Si)/s<sup>(11)</sup>. Since the maximum dose rate for these zones is much lower than the above threshold levels, no transient or permanent failures will occur in any mild environment zones due to dose rate effects.

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## Nine Mile Point Unit 2 EQD

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2. The C of C shall identify the supplied equipment by equipment mark number.

SECTION 5

QUALIFICATION DOCUMENTATION

5.1 MASTER LISTS (ML)

The equipment and components that are within the scope of 10CFR50.49(b) are listed in the ML in Appendix A and are included in the qualification program.

All safety-related equipment added as a result of the TMI action items (see FSAR Section 1.10) have been included in the Unit 2 qualification program and qualified as required.

Also included are post-accident monitoring equipment located in harsh environment, and specified as Category 1 and 2, Revision 2 of Regulatory Guide 1.97. The identity of categories (classifications) of equipment included in the EQ program in response to Regulatory Guide 1.97 can be found in the response to FSAR Question F421.36.

An important feature of the ML is its capability to identify all qualification documentation associated with any of the listed safety-related electrical equipment or components through reference to the associated SCEW sheets for that particular equipment or component. The identity of any qualification document associated with any of the listed items can be accessed through either the individual equipment identification number, (e.g., 2CSL\*FV114) or through a generic equipment manufacturer and model number (e.g., Rosemount 1153B pressure transmitter).

## Nine Mile Point Unit 2 EQD

Examples of documentation accessible through the ML reference to the SCEW sheets are purchase specifications, vendor records (e.g., test plans and test reports), and SWEC-generated documentation (e.g., aging analyses of mechanical equipment and equipment operability periods).

For each device, the ML provides a summary of the key elements of the Environmental Qualification Program. Tables 5-1a and 5-1b contain the heading for the ML, with a description of each entry. For BOP equipment, the first four characters of the device indicate the unit number and the major system in which the device is used. For NSSS equipment, the major system in which the device is used is indicated by the first three characters of the mark number. The subsequent characters are used to further segregate the devices by specific type and number.

### 5.1.1 Methodology for Selection of Equipment to be Qualified - BOP

The list of equipment requiring qualification (Appendix A - Equipment Qualification Master List) was taken from the Unit 2 BOP project equipment system equipment list (PES). The PES identifies equipment provided for the Unit 2 plant and is developed based on an engineering review of the Unit 2 engineering and design diagrams. Safety-related equipment is indicated in this list with an asterisk in the equipment identification number, e.g., 2CMS\*SOV33A.

From this encompassing equipment list, which is a computer-based document, certain equipment is deleted for various reasons, as follows, by appropriate coding of specific computer fields with the final list encompassing the scope described by 10CFR50.49(b)(1) and (b)(2) results.

Equipment is deleted from the list typically for the following reasons:

1. Nonsafety-related equipment which is isolated from a Class 1E circuit.
2. Equipment qualified under GE-NSSS programs.
3. Equipment which has a passive safety function such as pressure integrity, has no electrical safety function, and is not associated with Class 1E power.
4. Items that are determined to be in mild environment zones.

## Nine Mile Point Unit 2 EQD

### SECTION 6

#### MAINTENANCE/SURVEILLANCE PROGRAM

A maintenance and surveillance program will be implemented by NMPC prior to fuel load to ensure the continued environmental qualification of equipment during plant operation.

The objectives of this preventive maintenance and surveillance program are to ensure that the qualified equipment will perform its intended function in the environment in which it is expected to operate and to maintain retrievable records.

The list of environmentally qualified equipment identifies equipment to be included in the preventive maintenance and surveillance program. The list will be kept current to include mechanical equipment and ensure that equipment added to the plant because of design modifications is incorporated into the qualification program and the preventive maintenance and surveillance program.

For each piece of equipment, a preventive maintenance and surveillance program is being developed based on information such as requirements resulting from the equipment qualification report, and Unit 2 plant specific thermal and radiation qualified life calculations, manufacturer's recommendations, previous experience with similar equipment, etc. The qualification specific requirements are identified for each piece of equipment.

The initially developed preventive maintenance and surveillance programs will be modified during plant life if additional information, such as corrective maintenance frequency, surveillance testing, and industry experience (e.g., NRC information notices, circulars or bulletins, manufacturers' alert, LER's, reliability data bases, etc.), identifies any unanticipated degradation trends. In addition, the preventive maintenance and surveillance program identifies the lubricants suitable for each application and environment. These preventive maintenance and surveillance activities are performed by personnel using detailed procedures, as necessary.

The plant maintenance program will incorporate the scheduling and documentation of maintenance requirements and activities. Schedules will identify when equipment maintenance, replacement, testing, or calibration is

## Nine Mile Point Unit 2 EQD

work. On completion of scheduled activities, a notification will be made indicating work completion, which will document completion and facilitate rescheduling. This scheduling program will be used to alert appropriate plant departments of preventive maintenance, surveillance, and replacement requirements for environmentally qualified equipment.

Quality assurance and control programs will require inspections, verifications, and audits of activities and procedures important to safety. These programs will be performed on environmentally qualified equipment to ensure that schedules, maintenance, procedures, replacements, and documentation are completed in a correct and timely manner.

The preventive maintenance and surveillance program is in accordance with Regulatory Guide 1.33 as described in FSAR Section 1.8. Replacement parts will be qualified in accordance with the requirements of 10CFR50.49(1) and Regulatory Guide 1.89.

APPENDIX A

VOLUME 1





PAGE 1

SYS -- AAS  
REPORT NO. NHP815

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                       | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|---------------------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                                                   |             |       |         |          |       |          |
| 2AAS*HCV134  | BRTHG AIR CNTHT ISOL V<br>REMARKS:REG. GUIDE 1.97 | VELAN       | P304H | A       | SC289155 | H     | P304HAA  |
| 2AAS*HCV135  | BRTHG AIR CNTHT ISOL V<br>REMARKS:REG. GUIDE 1.97 | VELAN       | P304H | A       | SC240140 | H     | P304HAB  |
| 2AAS*HCV136  | BRTHG AIR CNTHT ISOL V<br>REMARKS:REG. GUIDE 1.97 | VELAN       | P304H | A       | PC289681 | H     | P304HAC  |
| 2AAS*HCV137  | BRTHG AIR CNTHT ISOL V<br>REMARKS:REG. GUIDE 1.97 | VELAN       | P304H | A       | PC240603 | H     | P304HAD  |



PAGE 2

SYS -- CCP  
REPORT NO. NMP815

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID            | DESCRIPTION              | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|-------------------------|--------------------------|-------------|-------|---------|----------|-------|----------|
| 2CCP*AOV37A             | AIR OPERATED PLUG VALVE  | XOMOX       | P304K | A       | ABN17504 | H     | P304KAA  |
| REMARKS:                |                          |             |       |         |          |       |          |
| 2CCP*AOV37B             | AIR OPERATED PLUG VALVE  | XOMOX       | P304K | A       | ABS17509 | H     | P304KAB  |
| REMARKS:                |                          |             |       |         |          |       |          |
| 2CCP*AOV38A             | AIR OPERATED PLUG VALVE  | XOMOX       | P304K | A       | ABN17504 | H     | P304KAC  |
| REMARKS:                |                          |             |       |         |          |       |          |
| 2CCP*AOV38B             | AIR OPERATED PLUG VALVE  | XOMOX       | P304K | A       | ABS17509 | H     | P304KAD  |
| REMARKS:                |                          |             |       |         |          |       |          |
| 2CCP*MOV122             | DRS-CONT ISO INBD        | VELAN       | P304R | A       | PC240612 | H     | P304RAQ  |
| REMARKS:REG. GUIDE 1.97 |                          |             |       |         |          |       |          |
| 2CCP*MOV124             | DRS-CONT ISO OUTBD       | VELAN       | P304R | A       | SC240135 | H     | P304RAR  |
| REMARKS:REG. GUIDE 1.97 |                          |             |       |         |          |       |          |
| 2CCP*MOV14A             | GATE VLV SFC*E1A INLET   | VELAN       | P304R | A       | SC215122 | H     | P304RAA  |
| REMARKS:REG. GUIDE 1.97 |                          |             |       |         |          |       |          |
| 2CCP*MOV14B             | GATE VLV SFC*E1B INLET   | VELAN       | P304R | A       | SC215122 | H     | P304RAB  |
| REMARKS:REG. GUIDE 1.97 |                          |             |       |         |          |       |          |
| 2CCP*MOV15A             | RCS-CONT ISO OUTBD       | VELAN       | P304R | A       | SC261145 | H     | P304RAC  |
| REMARKS:REG. GUIDE 1.97 |                          |             |       |         |          |       |          |
| 2CCP*MOV15B             | RCS-CONT ISO OUTBD       | VELAN       | P304R | A       | SC261145 | H     | P304RAD  |
| REMARKS:REG. GUIDE 1.97 |                          |             |       |         |          |       |          |
| 2CCP*MOV16A             | RCS-CONT ISO INBD        | VELAN       | P304R | A       | PC261649 | H     | P304RAE  |
| REMARKS:REG. GUIDE 1.97 |                          |             |       |         |          |       |          |
| 2CCP*MOV16B             | RCS-CONT ISO INBD        | VELAN       | P304R | A       | PC261641 | H     | P304RAF  |
| REMARKS:REG. GUIDE 1.97 |                          |             |       |         |          |       |          |
| 2CCP*MOV17A             | RCS-CONT ISO OUTBD       | VELAN       | P304R | A       | SC261145 | H     | P304RAG  |
| REMARKS:REG. GUIDE 1.97 |                          |             |       |         |          |       |          |
| 2CCP*MOV17B             | RCS-CONT ISO OUTBD       | VELAN       | P304R | A       | SC261145 | H     | P304RAH  |
| REMARKS:REG. GUIDE 1.97 |                          |             |       |         |          |       |          |
| 2CCP*MOV18A             | GATE VLV. SFC*E1A OUTLET | VELAN       | P304R | A       | SC215122 | H     | P304RAI  |
| REMARKS:                |                          |             |       |         |          |       |          |



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SYS -- CCP  
REPORT NO. NMP815

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID            | DESCRIPTION                    | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|-------------------------|--------------------------------|-------------|-------|---------|----------|-------|----------|
| 2CCP*NOV18B             | GATE VLV. SFC*E1B OUTLET       | VELAN       | P304R | A       | SC215122 | H     | P304RAJ  |
| REMARKS:                |                                |             |       |         |          |       |          |
| 2CCP*NOV22A             | GATE VLV. RCS OUTLET BLOCK VLV | VELAN       | P304R | A       | SC261145 | H     | P304RAK  |
| REMARKS:                |                                |             |       |         |          |       |          |
| 2CCP*NOV22B             | GATE VLV. RCS OUTLET BLOCK VLV | VELAN       | P304R | A       | SC261145 | H     | P304RAL  |
| REMARKS:                |                                |             |       |         |          |       |          |
| 2CCP*NOV265             | DRS-CONT ISO OUTBD             | VELAN       | P304R | A       | SC240135 | H     | P304RAS  |
| REMARKS:REG. GUIDE 1.97 |                                |             |       |         |          |       |          |
| 2CCP*NOV273             | DRS-CONT ISO INBD              | VELAN       | P304R | A       | PC250630 | H     | P304RAT  |
| REMARKS:REG. GUIDE 1.97 |                                |             |       |         |          |       |          |
| 2CCP*NOV93A             | GATE VLV. RCS INLET BLOCK VLV  | VELAN       | P304R | A       | SC261145 | H     | P304RAH  |
| REMARKS:                |                                |             |       |         |          |       |          |
| 2CCP*NOV93B             | GATE VLV. RCS INLET BLOCK VLV  | VELAN       | P304R | A       | SC261145 | H     | P304RAN  |
| REMARKS:                |                                |             |       |         |          |       |          |
| 2CCP*NOV94A             | RCS-CONT ISO INBD              | VELAN       | P304R | A       | PC261649 | H     | P304RAO  |
| REMARKS:                |                                |             |       |         |          |       |          |
| 2CCP*NOV94B             | RCS-CONT ISO INBD              | VELAN       | P304R | A       | PC261641 | H     | P304RAP  |
| REMARKS:                |                                |             |       |         |          |       |          |
| 2CCP*PT90A              | RBCLCH TO 2RCS-PIA CLRS        | ROSEMOUNT   | C071H | A       | SC261145 | H     | C071NAA  |
| REMARKS:                |                                |             |       |         |          |       |          |
| 2CCP*PT90B              | RBCLCH TO 2RCS-PIA CLRS        | ROSEMOUNT   | C071H | A       | SC240135 | H     | C071NAB  |
| REMARKS:                |                                |             |       |         |          |       |          |



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SYS -- CES  
REPORT NO. NMP815

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                   | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------------|-------------|-------|---------|----------|-------|----------|
| 2CES*Z01E    | PENETRATION COAX INSTR        | CONAX CORP  | E021P | A       | PC250621 | H     | E021PAA  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z02E    | PENETRATION COAX INSTR        | CONAX CORP  | E021P | A       | PC240603 | H     | E021PAB  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z05E    | PENETRATION INSTR (N)         | CONAX CORP  | E021P | A       | PC250621 | H     | E021PAE  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z06E    | PENETRATION INSTR (G)         | CONAX CORP  | E021P | A       | PC240603 | H     | E021PAF  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z07E    | PENETRATION CONTROL (G)       | CONAX CORP  | E021P | A       | PC250621 | H     | E021PAG  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z08E    | PENETRATION CONTROL (G)       | CONAX CORP  | E021P | A       | PC240603 | H     | E021PAH  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z09E    | PENETRATION 600V POWER (G)    | CONAX CORP  | E021P | A       | PC250621 | H     | E021PAI  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z10E    | PENETRATION CONTROL (G)       | CONAX CORP  | E021P | A       | PC240603 | H     | E021PAJ  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z11E    | PENETRATION COAX INSTR        | CONAX CORP  | E021P | A       | PC250625 | H     | E021PAK  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z12E    | PENETRATION COAX INSTR        | CONAX CORP  | E021P | A       | PC240607 | H     | E021PAL  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z17E    | PENETRATION CONTROL (Y)       | CONAX CORP  | E021P | A       | PC250627 | H     | E021PAQ  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z18E    | PENETR POWER CONT & INSTR (Y) | CONAX CORP  | E021P | A       | PC240609 | H     | E021PAR  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z19E    | PENETRATION CONTROL (Y)       | CONAX CORP  | E021P | A       | PC250627 | H     | E021PAS  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z20E    | PENETRATION CONTROL (Y)       | CONAX CORP  | E021P | A       | PC240609 | H     | E021PAT  |
|              | REMARKS:                      |             |       |         |          |       |          |
| 2CES*Z21E    | PENETRATION 600V POWER (Y)    | CONAX CORP  | E021P | A       | PC250627 | H     | E021PAU  |
|              | REMARKS:                      |             |       |         |          |       |          |





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JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
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REPORT DATE 03/25/86  
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|--------------|-----------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                       | *****       | ***** | *****   | *****    | ***** | *****    |
| 2CES*Z22E    | PENETRATION INSTR (N)       | CONAX CORP  | E021P | A       | PC240609 | H     | E021PAV  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z23E    | PENETRATION COAX INSTR      | CONAX CORP  | E021P | A       | PC250627 | H     | E021PAH  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z24E    | PENETRATION COAX INSTR      | CONAX CORP  | E021P | A       | PC240609 | H     | E021PAX  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z25E    | PENETRATION CONTROL (Y)     | CONAX CORP  | E021P | A       | PC250627 | H     | E021PAY  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z26E    | PENETRATION RPS CONTROL (Y) | CONAX CORP  | E021P | A       | PC240609 | H     | E021PAZ  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z29E    | PENETRATION COAX INSTR      | CONAX CORP  | E021P | A       | PC250630 | H     | E021PBC  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z30E    | PENETRATION COAX INSTR      | CONAX CORP  | E021P | A       | PC240612 | H     | E021PBD  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z51E    | PENETRATION CONTROL (B)     | CONAX CORP  | E021P | A       | PC240601 | H     | E021PBH  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z52E    | PENETRATION CONTROL (G)     | CONAX CORP  | E021P | A       | PC250623 | H     | E021PBX  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z53E    | PENETRATION CONTROL (P)     | CONAX CORP  | E021P | A       | PC261649 | H     | E021PBY  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z54E    | PENETRATION CONTROL (O)     | CONAX CORP  | E021P | A       | PC250630 | H     | E021PBZ  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z57E    | PENETR POWER CONTROL (G)    | CONAX CORP  | E021P | A       | PC215121 | H     | E021PCB  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z58E    | PENETR POWER CONTROL(Y)     | CONAX CORP  | E021P | A       | PC215121 | H     | E021PCC  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES*Z59E    | PENETR POWER CONTROL(Y)     | CONAX CORP  | E021P | A       | PC215121 | H     | E021PCD  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2CES-Z03E    | PENETRATION CONTROL (N)     | CONAX CORP  | E021P | A       | PC250621 | H     | E021PAC  |
| REMARKS:     |                             |             |       |         |          |       |          |



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PROJECT EQUIPMENT SYSTEM  
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|--------------|----------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                      | *****       | ***** | *****   | *****    | ***** | *****    |
| 2CES-Z04E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC240603 | H     | E021PAD  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z13E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC250625 | H     | E021PAM  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z14E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC240607 | H     | E021PAN  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z15E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC250627 | H     | E021PAO  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z16E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC240609 | H     | E021PAP  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z27E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC250630 | H     | E021PBA  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z28E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC240612 | H     | E021PBB  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z31E    | PENETRATION 600V POWER (N) | CONAX CORP  | E021P | A       | PC261641 | H     | E021PBE  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z32E    | PENETRATION 600V POWER (N) | CONAX CORP  | E021P | A       | PC261641 | H     | E021PBF  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z33E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC261641 | H     | E021PBG  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z34E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC261641 | H     | E021PBH  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z35E    | PENETRATION INSTR (N)      | CONAX CORP  | E021P | A       | PC261641 | H     | E021PBI  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z36E    | PENETRATION INSTR (N)      | CONAX CORP  | E021P | A       | PC261641 | H     | E021PBJ  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z37E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC261641 | H     | E021PBK  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z38E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC261641 | H     | E021PBL  |
| REMARKS:     |                            |             |       |         |          |       |          |



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PROJECT EQUIPMENT SYSTEM  
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|--------------|----------------------------|-------------|-------|---------|----------|-------|----------|
| 2CES-Z39E    | PENETRATION INSTR (N)      | CONAX CORP  | E021P | A       | PC261641 | H     | E021PBI  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z40E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC261641 | H     | E021PBN  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z41E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC261649 | H     | E021PBO  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z42E    | PENETRATION INSTR (N)      | CONAX CORP  | E021P | A       | PC261649 | H     | E021PBP  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z43E    | PENETRATION CONTROL (N)    | CONAX CORP  | E021P | A       | PC261649 | H     | E021PBQ  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z44E    | PENETRATION INSTR (N)      | CONAX CORP  | E021P | A       | PC261649 | H     | E021PBR  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z45E    | PENETRATION 13.8 KV (N)    | CONAX CORP  | E021P | A       | PC261649 | H     | E021PBS  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z46E    | PENETRATION 13.8 KV (N)    | CONAX CORP  | E021P | A       | PC261649 | H     | E021PBT  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z47E    | PENETRATION 600V POWER (N) | CONAX CORP  | E021P | A       | PC261641 | H     | E021PBU  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z48E    | PENETRATION UNASSIGNED     | CONAX CORP  | E021P | A       | PC261644 | H     | E021PCG  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z49E    | PENETRATION 600V POWER (N) | CONAX CORP  | E021P | A       | PC261649 | H     | E021PBV  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z50E    | PENETRATION UNASSIGNED     | CONAX CORP  | E021P | A       | PC261649 | H     | E021PCH  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z55E    | PENETRATION 600V POWER (N) | CONAX CORP  | E021P | A       | PC261641 | H     | E021PCA  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z56E    | PENETRATION UNSIGNED       | CONAX CORP  | E021P | A       | PC215121 | H     | E021PCF  |
| REMARKS:     |                            |             |       |         |          |       |          |
| 2CES-Z60E    | PENETR POWER & CONTROL (N) | CONAX CORP  | E021P | A       | PC215121 | H     | E021PCE  |
| REMARKS:     |                            |             |       |         |          |       |          |



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| EQUIPMENT ID            | DESCRIPTION               | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|-------------------------|---------------------------|-------------|-------|---------|----------|-------|----------|
| 2CHS*CAB10A             | CONTHT ATH LEAKAGE RADN   | KAHAN       | P281F | A       | SC289155 | H     | P281FAA  |
| REMARKS:                |                           |             |       |         |          |       |          |
| 2CHS*CAB10B             | CONTHT ATH LEAKAGE RADN   | KAHAN       | P281F | A       | SC289155 | H     | P281FAB  |
| REMARKS:                |                           |             |       |         |          |       |          |
| 2CHS*LT11A              | SUPPRESSION POOL LEVEL    | ROSEMOUNT   | C071H | A       | SC175102 | H     | C071HAE  |
| REMARKS:                |                           |             |       |         |          |       |          |
| 2CHS*LT11B              | SUPPRESSION POOL LEVEL    | ROSEMOUNT   | C071H | A       | SC175105 | H     | C071HAF  |
| REMARKS:REG. GUIDE 1.97 |                           |             |       |         |          |       |          |
| 2CHS*LT9A               | SUPPRESSION POOL LEVEL    | ROSEMOUNT   | C071H | A       | SC175102 | H     | C071HAC  |
| REMARKS:REG. GUIDE 1.97 |                           |             |       |         |          |       |          |
| 2CHS*LT9B               | SUPPRESSION POOL LEVEL    | ROSEMOUNT   | C071H | A       | SC175102 | H     | C071HAD  |
| REMARKS:REG. GUIDE 1.97 |                           |             |       |         |          |       |          |
| 2CHS*PNL66A             | H.2 ANALYZER PNL A        | CONSIP INC  | C001C | A       | ABN24033 | H     | C001CAA  |
| REMARKS:                |                           |             |       |         |          |       |          |
| 2CHS*PNL66B             | H.2 ANALYZER PNL B        | CONSIP INC  | C001C | A       | ABS24036 | H     | C001CAB  |
| REMARKS:                |                           |             |       |         |          |       |          |
| 2CHS*PNL73A             | H2/02 REMOTE PNL A        | CONSIP INC  | C001C | A       | ABN24033 | H     | C001CAC  |
| REMARKS:                |                           |             |       |         |          |       |          |
| 2CHS*PNL73B             | H2/02 REMOTE PNL B        | CONSIP INC  | C001C | A       | ABS24036 | H     | C001CAD  |
| REMARKS:                |                           |             |       |         |          |       |          |
| 2CHS*PT1A               | CONTAINMENT DRYWELL PRESS | ROSEMOUNT   | C071H | A       | SC289155 | H     | C071HAG  |
| REMARKS:REG. GUIDE 1.97 |                           |             |       |         |          |       |          |
| 2CHS*PT1B               | CONTAINMENT DRYWELL PRESS | ROSEMOUNT   | C071H | A       | SC289155 | H     | C071HAH  |
| REMARKS:REG. GUIDE 1.97 |                           |             |       |         |          |       |          |
| 2CHS*PT2A               | CONTAINMENT DRYWELL PRESS | ROSEMOUNT   | C071H | A       | SC261145 | H     | C071HAI  |
| REMARKS:REG. GUIDE 1.97 |                           |             |       |         |          |       |          |
| 2CHS*PT2B               | CONTAINMENT DRYWELL PRESS | ROSEMOUNT   | C071H | A       | SC261145 | H     | C071HAJ  |
| REMARKS:REG. GUIDE 1.97 |                           |             |       |         |          |       |          |
| 2CHS*PT7A               | SUPPRESSION CHAMBER PRESS | ROSEMOUNT   | C071H | A       | SC240135 | H     | C071HAK  |
| REMARKS:REG. GUIDE 1.97 |                           |             |       |         |          |       |          |





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|--------------|-------------------------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                                                 | *****       | ***** | *****   | *****    | ***** | *****    |
| 2CHS*PT7B    | SUPPRESSION CHAMBER PRESS<br>REMARKS: REG. GUIDE 1.97 | ROSENOUNT   | C071H | A       | SC261145 | H     | C071HAL  |
| 2CHS*SOV23A  | DRYHELL AIR SAMPLE<br>REMARKS:                        | TARGET ROCK | P304X | A       | PC289681 | H     | P304XAA  |
| 2CHS*SOV23B  | DRYHELL AIR SAMPLE<br>REMARKS:                        | TARGET ROCK | P304X | A       | PC289681 | H     | P304XAB  |
| 2CHS*SOV23C  | DRYHELL AIR SAMPLE<br>REMARKS:                        | TARGET ROCK | P304X | A       | PC289680 | H     | P304XAC  |
| 2CHS*SOV23D  | DRYHELL AIR SAMPLE<br>REMARKS:                        | TARGET ROCK | P304X | A       | PC289680 | H     | P304XAD  |
| 2CHS*SOV23E  | DRYHELL AIR SAMPLE<br>REMARKS:                        | TARGET ROCK | P304X | A       | PC289681 | H     | P304XAE  |
| 2CHS*SOV23F  | DRYHELL AIR SAMPLE<br>REMARKS:                        | TARGET ROCK | P304X | A       | PC289681 | H     | P304XAF  |
| 2CHS*SOV24A  | DHAIR CHPL INSD ISOL<br>REMARKS: REG. GUIDE 1.97      | TARGET ROCK | P304X | A       | PC289681 | H     | P304XAG  |
| 2CHS*SOV24B  | DHAIR SHPL INSD ISOL<br>REMARKS: REG. GUIDE 1.97      | TARGET ROCK | P304X | A       | PC289681 | H     | P304XAH  |
| 2CHS*SCV24C  | DH AIR SHPL OUTBD ISOL<br>REMARKS: REG. GUIDE 1.97    | TARGET ROCK | P304X | A       | SC289155 | H     | P304XAI  |
| 2CHS*SOV24D  | DH AIR SHPL OUTBD ISOL<br>REMARKS: REG. GUIDE 1.97    | TARGET ROCK | P304X | A       | SC289155 | H     | P304XAJ  |
| 2CHS*SOV25A  | SUPP CHMB AIR SAMPLE<br>REMARKS:                      | TARGET ROCK | P304X | A       | PC215121 | H     | P304XAK  |
| 2CHS*SOV25B  | SUPP CHMB AIR SAMPLE<br>REMARKS:                      | TARGET ROCK | P304X | A       | PC215121 | H     | P304XAL  |
| 2CHS*SOV25C  | SUPP CHMB AIR SAMPLE<br>REMARKS:                      | TARGET ROCK | P304X | A       | PC215121 | H     | P304XAM  |
| 2CHS*SOV25D  | SUPP CHMB AIR SAMPLE<br>REMARKS:                      | TARGET ROCK | P304X | A       | PC215121 | H     | P304XAN  |



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|--------------|----------------------------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                                                    | *****       | ***** | *****   | *****    | ***** | *****    |
| 2CHS*SOV26A  | SUPP CHMB AIR SHPL INBD ISO<br>REMARKS:REG. GUIDE 1.97   | TARGET ROCK | P304X | A       | PC215121 | H     | P304XAO  |
| 2CHS*SOV26B  | SUPP CHMB AIR SHPL IN BD ISO<br>REMARKS:REG. GUIDE 1.97  | TARGET ROCK | P304X | A       | PC215121 | H     | P304XAP  |
| 2CHS*SOV26C  | SUPP CHMB AIR SHPL OUTBD ISO<br>REMARKS:REG. GUIDE 1.97  | TARGET ROCK | P304X | A       | SC215122 | H     | P304XAQ  |
| 2CHS*SOV26D  | SUPP CHMB AIR SHPL OUTBD ISO<br>REMARKS:REG. GUIDE 1.97  | TARGET ROCK | P304X | A       | SC215122 | H     | P304XAR  |
| 2CHS*SOV32A  | DRYWELL SHPL RTN OUTBD ISOL<br>REMARKS:REG. GUIDE 1.97   | TARGET ROCK | P304X | A       | SC261145 | H     | P304XAS  |
| 2CHS*SOV32B  | DRYWELL SHPL RTN OUTBD ISOL<br>REMARKS:REG. GUIDE 1.97   | TARGET ROCK | P304X | A       | SC261145 | H     | P304XAT  |
| 2CHS*SOV33A  | DRYWELL SHPL RTN INBD ISOL<br>REMARKS:REG. GUIDE 1.97    | TARGET ROCK | P304X | A       | PC261644 | H     | P304XAU  |
| 2CHS*SOV33B  | DRYWELL SHPL RTN INBD ISOL<br>REMARKS:REG. GUIDE 1.97    | TARGET ROCK | P304X | A       | PC261649 | H     | P304XAV  |
| 2CHS*SOV34A  | SUPP CHMB SHPL RTN INBD ISOL<br>REMARKS:REG. GUIDE 1.97  | TARGET ROCK | P304X | A       | PC215121 | H     | P304XAH  |
| 2CHS*SOV34B  | SUPP CHMB SHPL RTN INBD ISOL<br>REMARKS:REG. GUIDE 1.97  | TARGET ROCK | P304X | A       | PC215121 | H     | P304XAX  |
| 2CHS*SOV35A  | SUPP CHMB SHPL RTN OUTBD ISOL<br>REMARKS:REG. GUIDE 1.97 | TARGET ROCK | P304X | A       | SC215122 | H     | P304XAY  |
| 2CHS*SOV35B  | SUPP CHMB SHPL RTN INBD ISOL<br>REMARKS:REG. GUIDE 1.97  | TARGET ROCK | P304X | A       | SC215122 | H     | P304XAZ  |
| 2CHS*SOV60A  | DH RADN OUTBD INLET ISOL<br>REMARKS:                     | TARGET ROCK | P304X | A       | SC289155 | H     | P304XBA  |
| 2CHS*SOV60B  | DH RADN OUTBD INLET ISOL<br>REMARKS:REG. GUIDE 1.97      | TARGET ROCK | P304X | A       | SC306175 | H     | P304XBB  |
| 2CHS*SOV61A  | DH RADN INBD INLET ISOL<br>REMARKS:REG. GUIDE 1.97       | TARGET ROCK | P304X | A       | PC306713 | H     | P304XBC  |



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SYS -- CHS  
REPORT NO. NMP815

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                          | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|------------------------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                                                | *****       | ***** | *****   | *****    | ***** | *****    |
| 2CHS*SOV61B  | DH RADN INSD INLET ISOL<br>REMARKS:REG. GUIDE 1.97   | TARGET ROCK | P304X | A       | PC306713 | H     | P304XSD  |
| 2CHS*SOV62A  | DH RADN OUTBD OUTLET ISOL<br>REMARKS:REG. GUIDE 1.97 | TARGET ROCK | P304X | A       | SC289155 | H     | P304XBE  |
| 2CHS*SOV62B  | DH RADN OUTBD OUTLET ISOL<br>REMARKS:REG. GUIDE 1.97 | TARGET ROCK | P304X | A       | SC261145 | H     | P304XBF  |
| 2CHS*SOV63A  | DH RADN INSD OUTLET ISOL<br>REMARKS:REG. GUIDE 1.97  | TARGET ROCK | P304X | A       | PC261644 | H     | P304XBG  |
| 2CHS*SOV63B  | DH RADN INSD OUTLET ISOL<br>REMARKS:REG. GUIDE 1.97  | TARGET ROCK | P304X | A       | PC261649 | H     | P304XBH  |
| 2CHS*SOV64A  | H2/02 ANALYZER INL ISOL<br>REMARKS:                  | TARGET ROCK | P304X | A       | ABN24033 | H     | P304XBI  |
| 2CHS*SOV64B  | H2/02 ANALYZER INL ISOL<br>REMARKS:                  | TARGET ROCK | P304X | A       | ABS24036 | H     | P304XBJ  |
| 2CHS*SOV65A  | H2/02 ANALYZER OUT ISOL<br>REMARKS:                  | TARGET ROCK | P304X | A       | ABN24033 | H     | P304XBK  |
| 2CHS*SOV65B  | H2/02 ANALYZER OUT ISOL<br>REMARKS:                  | TARGET ROCK | P304X | A       | ABS24036 | H     | P304XBL  |
| 2CHS*SOV74A  | PAS SAMPLE-A LOOP<br>REMARKS:                        | TARGET ROCK | P304X | A       | SC240140 | H     | P304XBH  |
| 2CHS*SOV74B  | PAS SAMPLE-B LOOP<br>REMARKS:                        | TARGET ROCK | P304X | A       | SC240135 | H     | P304XBN  |
| 2CHS*SOV75A  | PAS SAMPLE-A LOOP<br>REMARKS:                        | TARGET ROCK | P304X | A       | SC240135 | H     | P304XB0  |
| 2CHS*SOV75B  | PAS SAMPLE-B LOOP<br>REMARKS:                        | TARGET ROCK | P304X | A       | SC240135 | H     | P304XBP  |
| 2CHS*SOV76A  | POST LOCA SANPL SUCT ISOL V<br>REMARKS:              | TARGET ROCK | P304X | A       | SC240140 | H     | P304XBQ  |
| 2CHS*SOV76B  | POST LOCA SANPL SUCT ISOL V<br>REMARKS:              | TARGET ROCK | P304X | A       | SC240135 | H     | P304XBR  |



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SYS -- CHS  
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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID            | DESCRIPTION                | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|-------------------------|----------------------------|-------------|-------|---------|----------|-------|----------|
| *****                   | *****                      | *****       | ***** | *****   | *****    | ***** | *****    |
| 2CHS*SOV77A             | POST LOCA SANPL RTN ISOL V | TARGET ROCK | P304X | A       | SC240135 | H     | P304XBS  |
| REMARKS:                |                            |             |       |         |          |       |          |
| 2CHS*SOV77B             | POST LOCA SANPL RTN ISOL V | TARGET ROCK | P304X | A       | SC240135 | H     | P304XBT  |
| REMARKS:                |                            |             |       |         |          |       |          |
| 2CHS*TE101              | DRYHELL AREA TEMP          | PYCO        | C041D | A       | PC306713 | H     | C041DBH  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2CHS*TE102              | DRYHELL AREA TEMP          | PYCO        | C041D | A       | PC289681 | H     | C041DBX  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2CHS*TE103              | DRYHELL AREA TEMP          | PYCO        | C041D | A       | PC261641 | H     | C041DBY  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2CHS*TE104              | DRYHELL AREA TEMP          | PYCO        | C041D | A       | PC261649 | H     | C041DBZ  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2CHS*TE105              | DRYHELL AREA TEMP          | PYCO        | C041D | A       | PC250619 | H     | C041DCA  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2CHS*TE106              | DRYHELL AREA TEMP          | PYCO        | C041D | A       | PC240612 | H     | C041DCB  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2CHS*TE107              | SUPP CHAMBER AREA TEMP     | PYCO        | C041D | A       | PC215121 | H     | C041DCC  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2CHS*TE108              | SUPP CHAMBER AREA TEMP     | PYCO        | C041D | A       | PC215121 | H     | C041DCD  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2CHS*TE109              | SUPP CHAMBER AREA TEMP     | PYCO        | C041D | A       | PC215121 | H     | C041DCE  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2CHS*TE116              | DRYHELL AREA TEMP          | PYCO        | C041D | A       | PC306713 | H     | C041DCF  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2CHS*TE117              | DRYHELL AREA TEMP          | PYCO        | C041D | A       | PC289681 | H     | C041DCG  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2CHS*TE118              | DRYHELL AREA TEMP          | PYCO        | C041D | A       | PC261649 | H     | C041DCH  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2CHS*TE119              | DRYHELL AREA TEMP          | PYCO        | C041D | A       | PC261638 | H     | C041DCI  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |





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SYS -- CHS  
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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                       | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|---------------------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                                             | *****       | ***** | *****   | *****    | ***** | *****    |
| 2CHS*TE120   | DRYHELL AREA TEMP<br>REMARKS:REG. GUIDE 1.97      | PYCO        | C041D | A       | PC250625 | H     | C041DCJ  |
| 2CHS*TE121   | DRYHELL AREA TEMP<br>REMARKS:REG. GUIDE 1.97      | PYCO        | C041D | A       | PC240603 | H     | C041DCK  |
| 2CHS*TE122   | SUPP CHAMBER AREA TEMP<br>REMARKS:REG. GUIDE 1.97 | PYCO        | C041D | A       | PC215121 | H     | C041DCL  |
| 2CHS*TE123   | SUPP CHAMBER AREA TEMP<br>REMARKS:REG. GUIDE 1.97 | PYCO        | C041D | A       | PC215121 | H     | C041DCN  |
| 2CHS*TE124   | SUPP CHAMBER AREA TEMP<br>REMARKS:REG. GUIDE 1.97 | PYCO        | C041D | A       | PC215121 | H     | C041DCN  |
| 2CHS*TE50A   | SUPPR POOL WATER TEMP<br>REMARKS:                 | PYCO        | C041D | A       | SC196113 | H     | C041DAA  |
| 2CHS*TE50B   | SUPPR POOL WATER TEMP<br>REMARKS:                 | PYCO        | C041D | A       | SC196113 | H     | C041DAB  |
| 2CHS*TE50C   | SUPPR POOL WATER TEMP<br>REMARKS:                 | PYCO        | C041D | A       | SC196113 | H     | C041DAC  |
| 2CHS*TE50D   | SUPPR POOL WATER TEMP<br>REMARKS:                 | PYCO        | C041D | A       | SC196113 | H     | C041DAD  |
| 2CHS*TE51A   | SUPPR POOL WATER TEMP<br>REMARKS:                 | PYCO        | C041D | A       | SC196113 | H     | C041DAE  |
| 2CHS*TE51B   | SUPPR POOL WATER TEMP<br>REMARKS:                 | PYCO        | C041D | A       | SC196113 | H     | C041DAF  |
| 2CHS*TE51C   | SUPPR POOL WATER TEMP<br>REMARKS:                 | PYCO        | C041D | A       | SC196113 | H     | C041DAG  |
| 2CHS*TE51D   | SUPPR POOL WATER TEMP<br>REMARKS:                 | PYCO        | C041D | A       | SC196113 | H     | C041DAH  |
| 2CHS*TE52A   | SUPPR POOL WATER TEMP<br>REMARKS:                 | PYCO        | C041D | A       | SC196114 | H     | C041DAI  |
| 2CHS*TE52B   | SUPPR POOL WATER TEMP<br>REMARKS:                 | PYCO        | C041D | A       | SC196114 | H     | C041DAJ  |



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SYS -- CHS  
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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION           | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-----------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                 | *****       | ***** | *****   | *****    | ***** | *****    |
| 2CHS*TE52C   | SUPPR POOL WATER TEMP | PYCO        | C041D | A       | SC196114 | H     | C041DAK  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE52D   | SUPPR POOL WATER TEMP | PYCO        | C041D | A       | SC196114 | H     | C041DAL  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE53A   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196116 | H     | C041DAH  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE53B   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196116 | H     | C041DAN  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE53C   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196116 | H     | C041DAO  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE53D   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196116 | H     | C041DAP  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE54A   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196117 | H     | C041DAQ  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE54B   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196117 | H     | C041DAR  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE54C   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196117 | H     | C041DAS  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE54D   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196117 | H     | C041DAT  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE55A   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196116 | H     | C041DAU  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE55B   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196116 | H     | C041DAV  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE55C   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196116 | H     | C041DAH  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE55D   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196116 | H     | C041DAX  |
| REMARKS:     |                       |             |       |         |          |       |          |
| 2CHS*TE56A   | SUPP POOL WATER TEMP  | PYCO        | C041D | A       | SC196116 | H     | C041DAY  |
| REMARKS:     |                       |             |       |         |          |       |          |



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SYS -- CHS  
REPORT NO. NMP815

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION          | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|----------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                | *****       | ***** | *****   | *****    | ***** | *****    |
| 2CHS*TE56B   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196116 | H     | C041DAZ  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE56C   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196116 | H     | C041DBA  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE56D   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196116 | H     | C041DBB  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE57A   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196120 | H     | C041DBC  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE57B   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196120 | H     | C041DBD  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE57C   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196120 | H     | C041DBE  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE57D   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196120 | H     | C041DBF  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE59A   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196113 | H     | C041DBG  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE58B   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196113 | H     | C041DBH  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE56C   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196113 | H     | C041DBI  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE58D   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196113 | H     | C041DBJ  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE59A   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196113 | H     | C041DBK  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE59B   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196113 | H     | C041DBL  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE59C   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196113 | H     | C041DBM  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2CHS*TE59D   | SUPP POOL WATER TEMP | PYCO        | C041D | A       | SC196113 | H     | C041DBN  |
| REMARKS:     |                      |             |       |         |          |       |          |



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SYS -- CMS  
REPORT NO. NMP815

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                     | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                                                 |             |       |         |          |       |          |
| 2CHS*TE67A   | SUPP POOL WATER TEMP<br>REMARKS:REG. GUIDE 1.97 | PYCO        | C041D | A       | PC215121 | H     | C041DBO  |
| 2CHS*TE67B   | SUPP POOL WATER TEMP<br>REMARKS:REG. GUIDE 1.97 | PYCO        | C041D | A       | PC215121 | H     | C041DBP  |
| 2CHS*TE68A   | SUPP POOL WATER TEMP<br>REMARKS:REG. GUIDE 1.97 | PYCO        | C041D | A       | PC215121 | H     | C041DBQ  |
| 2CHS*TE68B   | SUPP POOL WATER TEMP<br>REMARKS:REG. GUIDE 1.97 | PYCO        | C041D | A       | PC215121 | H     | C041DBR  |
| 2CHS*TE69A   | SUPP POOL WATER TEMP<br>REMARKS:REG. GUIDE 1.97 | PYCO        | C041D | A       | PC215121 | H     | C041DBS  |
| 2CHS*TE69B   | SUPP POOL WATER TEMP<br>REMARKS:REG. GUIDE 1.97 | PYCO        | C041D | A       | PC215121 | H     | C041DBT  |
| 2CHS*TE70A   | SUPP POOL WATER TEMP<br>REMARKS:REG. GUIDE 1.97 | PYCO        | C041D | A       | PC215121 | H     | C041DBU  |
| 2CHS*TE70B   | SUPP POOL WATER TEMP<br>REMARKS:REG. GUIDE 1.97 | PYCO        | C041D | A       | PC215121 | H     | C041DBV  |





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SYS -- CPS  
REPORT NO. NHP815

J.O.NO. 1217700  
JOB NAME NINE HILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
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REPORT DATE 03/25/86  
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| EQUIPMENT ID | DESCRIPTION                                           | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                                                       |             |       |         |          |       |          |
| 2CPS*AOV104  | 2CPS-FN1 DH INL OUTBD V<br>REMARKS:REG. GUIDE 1.97    | POSI-SEAL   | P304D | A       | SC289155 | H     | P304DAA  |
| 2CPS*AOV105  | 2CPS-FN1 SUPPR INL OUTBD V<br>REMARKS:REG. GUIDE 1.97 | POSI-SEAL   | P304D | A       | SC215122 | H     | P304DAB  |
| 2CPS*AOV106  | 2CPS-FN1 DH INL INBD V<br>REMARKS:REG. GUIDE 1.97     | POSI-SEAL   | P304D | A       | PC289681 | H     | P304DAC  |
| 2CPS*AOV107  | 2CPS-FN1 SUPPR INL INBD V<br>REMARKS:REG. GUIDE 1.97  | POSI-SEAL   | P304D | A       | PC215121 | H     | P304DAD  |
| 2CPS*AOV108  | DRYWELL EXH INBD ISOL V<br>REMARKS:REG. GUIDE 1.97    | POSI-SEAL   | P304D | A       | PC289681 | H     | P304DAE  |
| 2CPS*AOV109  | SUPPR EXH INBD ISOL V<br>REMARKS:REG. GUIDE 1.97      | POSI-SEAL   | P304D | A       | PC215121 | H     | P304DAF  |
| 2CPS*AOV110  | DRYWELL EXH OUTBD ISOL V<br>REMARKS:REG. GUIDE 1.97   | POSI-SEAL   | P304D | A       | SC289155 | H     | P304DAG  |
| 2CPS*AOV111  | SUPPR EXH OUTBD ISOL V<br>REMARKS:REG. GUIDE 1.97     | POSI-SEAL   | P304D | A       | SC215122 | H     | P304DAH  |
| 2CPS*SOV119  | SUPPR INL OUTBD ISOL V<br>REMARKS:REG. GUIDE 1.97     | TARGET ROCK | P304X | A       | SC215122 | H     | P304XBU  |
| 2CPS*SOV120  | DRYWELL INL OUTBD ISOL V<br>REMARKS:REG. GUIDE 1.97   | TARGET ROCK | P304X | A       | SC289155 | H     | P304XBV  |
| 2CPS*SOV121  | SUPPR INL INBD ISOL V<br>REMARKS:REG. GUIDE 1.97      | TARGET ROCK | P304X | A       | PC215121 | H     | P304XBH  |
| 2CPS*SOV122  | DRYWELL INL INBD ISOL V<br>REMARKS:REG. GUIDE 1.97    | TARGET ROCK | P304X | A       | PC289681 | H     | P304XSX  |
| 2CPS*SOV132  | 2CPS*AOV107 N2 SPLY ISOL V<br>REMARKS:                | TARGET ROCK | P304X | A       | SC215122 | H     | P304XEQ  |
| 2CPS*SOV133  | 2CPS*AOV109 N2 SPLY ISOL V<br>REMARKS:                | TARGET ROCK | P304X | A       | SC215122 | H     | P304XER  |



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SYS -- CSH  
REPORT NO. NMP815

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                            | VENDOR NAME    | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|--------------------------------------------------------|----------------|-------|---------|----------|-------|----------|
| *****        |                                                        |                |       |         |          |       |          |
| 2CSH*AOV108  | 2CSH-PI DISCH TEST CHECK<br>REMARKS:REG. GUIDE 1.97    | ANCHOR/DARLING | P303H | A       | PC306712 | H     | P303HAA  |
| 2CSH*HCV120  | REACTOR VESSEL HAND CONTROL<br>REMARKS:REG. GUIDE 1.97 | VELAN          | P304E | A       | PC306711 | H     | P304EAA  |
| 2CSH*HCV133  | CORE SPRAY P TEST BYPASS<br>REMARKS:                   | COPE-S-VULCAN  | C051H | A       | SC215122 | H     | C051HAO  |
| 2CSH*N2      | HPCS SYS PRESSURE MOTOR<br>REMARKS:                    | GOULDS PUMPS   | P222X | A       | SC175108 | H     | P222XAD  |



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SYS -- CSL  
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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
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SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                          | VENDOR NAME    | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|------------------------------------------------------|----------------|-------|---------|----------|-------|----------|
| *****        |                                                      |                |       |         |          |       |          |
| 2CSL*AOV101  | INBD TESTABLE CHECK VALVE<br>REMARKS:REG. GUIDE 1.97 | ANCHOR/DARLING | P303H | A       | PC306711 | H     | P303HAB  |
| 2CSL*FV114   | CORE SPRAY PUMP TEST BYPASS<br>REMARKS:              | COPE-S-VULCAN  | C051H | A       | SC175103 | H     | C051HAA  |
| 2CSL*HCV117  | RX VSSL HAND CONTROL VLV<br>REMARKS:                 | VELAN          | P304E | A       | PC306711 | H     | P304EAH  |
| 2CSL*NOV104  | LPCS INJECTION VALVE<br>REMARKS:REG. GUIDE 1.97      | VELAN          | P304R | A       | SC289155 | H     | P304RAU  |
| 2CSL*NOV107  | GATE VALVE<br>REMARKS:                               | VELAN          | P304R | A       | ABN17503 | H     | P304RAV  |
| 2CSL*NOV112  | LPCS PHP SUCT VALVE<br>REMARKS:REG. GUIDE 1.97       | CLOW           | P304Y | A       | SC196114 | H     | P304YAA  |
| 2CSL*H12     | LPCS SYS PRESSURE MOTOR<br>REMARKS:                  | GOULDS PUMPS   | P222X | A       | ABN17503 | H     | P222XAF  |



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SYS -- DER  
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PROJECT EQUIPMENT SYSTEM  
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| EQUIPMENT ID | DESCRIPTION              | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|--------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                          |             |       |         |          |       |          |
| 2DER*HOV119  | GATE VALVE               | VELAN       | P304S | A       | PC215121 | H     | P304SAA  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2DER*HOV120  | GATE VALVE               | VELAN       | P304S | A       | SC215122 | H     | P304SAB  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2DER*HOV128  | REACTOR DRAIN ISOL VALVE | VELAN       | P304R | A       | PC240606 | H     | P304RAH  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2DER*HOV129  | REACTOR DRAIN ISOL VALVE | VELAN       | P304R | A       | PC240606 | H     | P304RAX  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2DER*HOV130  | GLOBE VALVE              | VELAN       | P304S | A       | PC240603 | H     | P304SAC  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2DER*HOV131  | GLOBE VALVE              | VELAN       | P304S | A       | SC240135 | H     | P304SAD  |
| REMARKS:     |                          |             |       |         |          |       |          |



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SYS -- DFR  
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PROJECT EQUIPMENT SYSTEM  
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RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                  | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                              |             |       |         |          |       |          |
| 2DFR*LS143   | RHS B PHP RH FLD WTR LVL     | MAGNETROL   | C021L | A       | ABS17509 | H     | C021LAC  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2DFR*LS144   | RHS C PHP RH FLD WTR LVL     | MAGNETROL   | C021L | A       | ABS17508 | H     | C021LAD  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2DFR*LS145   | ICS PHP RH FLD WTR LVL       | MAGNETROL   | C021L | A       | SC175106 | H     | C021LAE  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2DFR*LS146   | CSH PHP RH FLD WTR LVL       | MAGNETROL   | C021L | A       | SC175108 | H     | C021LAF  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2DFR*LS147   | CSL PHP RH FLD WTR LVL       | MAGNETROL   | C021L | A       | ABN17503 | H     | C021LAG  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2DFR*LS148   | RHS A PHP RH FLD WTR LVL     | MAGNETROL   | C021L | A       | ABN17504 | H     | C021LAH  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2DFR*LS150   | RX BLDG GENERAL AREA FLD ALM | MAGNETROL   | C021L | A       | SC175102 | H     | C021LAQ  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2DFR*LS152   | RX BLDG GENERAL AREA FLD ALM | MAGNETROL   | C021L | A       | SC175105 | H     | C021LAR  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2DFR*LS3A    | 2RHS*E1A CUBICLE FLOODED     | MAGNETROL   | C021L | A       | ABN17505 | H     | C021LAA  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2DFR*LS3B    | 2RHS*E1B CUBICLE FLOODED     | MAGNETROL   | C021L | A       | ABS17510 | H     | C021LAB  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2DFR*MOV120  | GATE VALVE                   | VELAN       | P304S | A       | SC215122 | H     | P304SAE  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2DFR*MOV121  | GATE VALVE                   | VELAN       | P304S | A       | PC215121 | H     | P304SAF  |
| REMARKS:     | REG. GUIDE 1.97              |             |       |         |          |       |          |
| 2DFR*MOV139  | GATE VALVE                   | VELAN       | P304S | A       | SC240135 | H     | P304SAG  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2DFR*MOV140  | GATE VALVE                   | VELAN       | P304S | A       | PC240601 | H     | P304SAH  |
| REMARKS:     | REG. GUIDE 1.97              |             |       |         |          |       |          |



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SYS -- DHS  
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PROJECT EQUIPMENT SYSTEM  
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RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION             | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                         |             |       |         |          |       |          |
| 2DHS*HCCA1   | 125VDC MCC RB ELEV. 240 | TELE-MECH   | E015Q | A       | ABN24033 | H     | E015QAA  |
| REMARKS:     |                         |             |       |         |          |       |          |
| 2DHS*HCCB1   | 125VDC MCC RB ELEV. 240 | TELE-MECH   | E015Q | A       | ABS24036 | H     | E015QAB  |
| REMARKS:     |                         |             |       |         |          |       |          |



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SYS -- EHS  
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| EQUIPMENT ID | DESCRIPTION          | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|----------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                      |             |       |         |          |       |          |
| 2EHS*MCC102  | STANDBY MCC CLASS 1E | TELE-MECH   | E015Q | A       | ABN24033 | H     | E015QAC  |
| REMARKS:     |                      |             |       |         |          |       |          |
| 2EHS*MCC302  | ENERG MCC            | TELE-MECH   | E015Q | A       | ABS24036 | H     | E015QAD  |
| REMARKS:     |                      |             |       |         |          |       |          |



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PROJECT EQUIPMENT SYSTEM  
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| EQUIPMENT ID | DESCRIPTION              | VENDOR NAME       | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|--------------------------|-------------------|-------|---------|----------|-------|----------|
| *****        |                          |                   |       |         |          |       |          |
| 2EJA*PNL100A | RB 120/280V HEATER PNL   | BROWN BOVERI ELEC | E014T | A       | ABN24033 | H     | E014TAA  |
| REMARKS:     |                          |                   |       |         |          |       |          |
| 2EJA*PNL300B | RB 120/208V HEATER PNL   | BROWN BOVERI ELEC | E014T | A       | ABS24036 | H     | E014TAB  |
| REMARKS:     |                          |                   |       |         |          |       |          |
| 2EJA*XD100A  | DIST XFMR 600V-208Y/120V | SQUARE D CO       | E011T | A       | ABN24033 | H     | E011TAC  |
| REMARKS:     |                          |                   |       |         |          |       |          |
| 2EJA*XD300B  | DIST XFMR 600V-208Y/120V | SQUARE D CO       | E011T | A       | ABS24036 | H     | E011TAD  |
| REMARKS:     |                          |                   |       |         |          |       |          |





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J.O.NO. 1217700  
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PROJECT EQUIPMENT SYSTEM  
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| EQUIPMENT ID | DESCRIPTION             | VENDOR NAME       | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------|-------------------|-------|---------|----------|-------|----------|
| *****        | *****                   | *****             | ***** | *****   | *****    | ***** | *****    |
| 2EJS*PNL101A | SHGR RM A EMER 600V PNL | BROWN BOVERI ELEC | E014T | A       | ABN24033 | H     | E014TAC  |
| REMARKS:     |                         |                   |       |         |          |       |          |
| 2EJS*PNL103A | AB-N EMER 600V PNL      | BROWN BOVERI ELEC | E014T | A       | ABN24033 | H     | E014TAD  |
| REMARKS:     |                         |                   |       |         |          |       |          |
| 2EJS*PNL104A | AB-N EMER 600V PNL      | BROWN BOVERI ELEC | E014T | A       | ABN24033 | H     | E014TAE  |
| REMARKS:     |                         |                   |       |         |          |       |          |
| 2EJS*PNL302B | AB-S EMER 600V PNL      | BROWN BOVERI ELEC | E014T | A       | ABS24036 | H     | E014TAF  |
| REMARKS:     |                         |                   |       |         |          |       |          |
| 2EJS*PNL303B | AB-S EMER 600V PNL      | BROWN BOVERI ELEC | E014T | A       | ABS24036 | H     | E014TAG  |
| REMARKS:     |                         |                   |       |         |          |       |          |
| 2EJS*PNL304B | AB-S EMER 600V PNL      | BROWN BOVERI ELEC | E014T | A       | ABS24036 | H     | E014TAH  |
| REMARKS:     |                         |                   |       |         |          |       |          |



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SYS -- EPS  
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PROJECT EQUIPMENT SYSTEM  
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| EQUIPMENT ID | DESCRIPTION         | VENDOR NAME       | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|---------------------|-------------------|-------|---------|----------|-------|----------|
| *****        |                     |                   |       |         |          |       |          |
| 2EPS*SWG001  | 13.8KV EMERG SWG001 | BROWN BOVERI ELEC | E015N | A       | ABN24033 | H     | E015NAA  |
| REMARKS:     |                     |                   |       |         |          |       |          |
| 2EPS*SWG002  | 13.8KV EMERG SWG002 | BROWN BOVERI ELEC | E015N | A       | ABN24033 | H     | E015NAB  |
| REMARKS:     |                     |                   |       |         |          |       |          |
| 2EPS*SWG003  | 13.8KV EMERG SWG003 | BROWN BOVERI ELEC | E015N | A       | ABS24036 | H     | E015NAC  |
| REMARKS:     |                     |                   |       |         |          |       |          |
| 2EPS*SWG004  | 13.8KV EMERG SWG004 | BROWN BOVERI ELEC | E015N | A       | ABS24036 | H     | E015NAD  |
| REMARKS:     |                     |                   |       |         |          |       |          |



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PROJECT EQUIPMENT SYSTEM  
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| EQUIPMENT ID | DESCRIPTION                 | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-----------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                             |             |       |         |          |       |          |
| 2FPW*SOV218  | 2RCS-PIA FIRE PROT WTR CONT | TARGET ROCK | P304X | A       | SC240135 | H     | P304XBY  |
|              | REMARKS:REG. GUIDE 1.97     |             |       |         |          |       |          |
| 2FPW*SOV219  | 2RCS-PIA FIRE PROT WTR CONT | TARGET ROCK | P304X | A       | PC250625 | H     | P304XBZ  |
|              | REMARKS:REG. GUIDE 1.97     |             |       |         |          |       |          |
| 2FPW*SOV220  | 2RCS-PIB FIRE PROT WTR CONT | TARGET ROCK | P304X | A       | SC240135 | H     | P304XCA  |
|              | REMARKS:REG. GUIDE 1.97     |             |       |         |          |       |          |
| 2FPW*SOV221  | 2RCS-PIB FIRE PROT WTR CONT | TARGET ROCK | P304X | A       | PC250619 | H     | P304XCB  |
|              | REMARKS:REG. GUIDE 1.97     |             |       |         |          |       |          |



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SYS -- FHS  
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| EQUIPMENT ID | DESCRIPTION             | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                         |             |       |         |          |       |          |
| 2FHS*MOV21A  | GATE VALVE              | VELAN       | P304R | A       | HST24045 | H     | P304RAY  |
|              | REMARKS:REG. GUIDE 1.97 |             |       |         |          |       |          |
| 2FHS*MOV21B  | GATE VALVE              | VELAN       | P304R | A       | HST24045 | H     | P304RAZ  |
|              | REMARKS:REG. GUIDE 1.97 |             |       |         |          |       |          |





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SYS -- GSN  
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JOB CLIENT NIAGARA MOHAWK

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| EQUIPMENT ID | DESCRIPTION                | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|----------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                            |             |       |         |          |       |          |
| 2GSN*SOV166  | TIP PURGE CONTHT ISOLN VLV | TARGET ROCK | P304X | A       | SC240138 | H     | P304XEP  |
| REMARKS:     |                            |             |       |         |          |       |          |



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| EQUIPMENT ID | DESCRIPTION                        | VENDOR NAME      | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|------------------------------------|------------------|-------|---------|----------|-------|----------|
| 2GTS*AOV101  | PRIMARY CONT PURGE ISOL V          | POSI-SEAL        | P304D | A       | SC306181 | H     | P304DAI  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*CH1A    | FILTER TRAIN A HEATER              | HINE SAFETY APPL | P243U | A       | SG261356 | H     | P243UAA  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*CH1B    | FILTER TRAIN B HEATER              | HINE SAFETY APPL | P243U | A       | SG261355 | H     | P243UAB  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*FN1A    | *FLT1A DISCHARGE FAN               | BUFFALO FORGE    | P413S | A       | SG261356 | H     | P413SAA  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*FN1B    | *FLT1B DISCHARGE FAN               | BUFFALO FORGE    | P413S | A       | SG261355 | H     | P413SAB  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*FS25A   | *CH1A HTR AIR FLOW CUTOUT          | HINE SAFETY APPL | P243U | A       | SG261356 | H     | P243UAC  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*FS25B   | *CH1B HTR AIR FLOW CUTOUT          | HINE SAFETY APPL | P243U | A       | SG261355 | H     | P243UAD  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*FT10A   | 2GTS*FAN 1A DISCH FLOW             | ROSEMOUNT        | C071H | A       | SG261356 | H     | C071HBJ  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*FT10B   | 2GTS*FAN 1B DISCH FLOW             | ROSEMOUNT        | C071H | A       | SG261355 | H     | C071HBI  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*HOV1A   | BUTTERFLY OR TRICENTRIC VALVE CLOW |                  | P304Y | A       | SC306181 | H     | P304YAB  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*HOV1B   | BUTTERFLY OR TRICENTRIC VALVE CLOW |                  | P304Y | A       | SC306181 | H     | P304YAC  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*HOV2A   | BUTTERFLY OR TRICENTRIC VALVE CLOW |                  | P304Y | A       | SG261356 | H     | P304YAD  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*HOV2B   | BUTTERFLY OR TRICENTRIC VALVE CLOW |                  | P304Y | A       | SG261355 | H     | P304YAE  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*HOV28A  | CROSS-BLEED L VLV                  | CLOW             | P304Y | A       | SG261356 | H     | P304YAH  |
| REMARKS:     |                                    |                  |       |         |          |       |          |
| 2GTS*HOV28B  | CROSS-BLEED L VLV                  | CLOW             | P304Y | A       | SG261355 | H     | P304YAI  |
| REMARKS:     |                                    |                  |       |         |          |       |          |



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PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                   | VENDOR NAME      | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------------|------------------|-------|---------|----------|-------|----------|
| *****        | *****                         | *****            | ***** | *****   | *****    | ***** | *****    |
| 2GTS*MOV3A   | BUTTERFLY OR TRICENTRIC VALVE | CLOW             | P304Y | A       | SG261356 | H     | P304YAF  |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*MOV3B   | BUTTERFLY OR TRICENTRIC VALVE | CLOW             | P304Y | A       | SG261355 | H     | P304YAG  |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*MOV4A   | GATE VALVE                    | VELAN            | P304R | A       | SG261356 | H     | P304RBA  |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*MOV4B   | GATE VALVE                    | VELAN            | P304R | A       | SG261355 | H     | P304RBB  |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*PDT21A  | 2GTS*FLT 1A DIFF PRESS        | NINE SAFETY APPL | P243U | A       | SG261356 | H     | P243UAE  |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*PDT21B  | 2GTS*FLT 1B DIFF PRESS        | NINE SAFETY APPL | P243U | A       | SG261355 | H     | P243UAF  |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*PDT5A   | RX BLDG IN/OUT DIFF PRESS     | ROSEMOUNT        | C071H | A       | SG261355 | H     | C071H BK |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*PDT5B   | RX BLDG IN/OUT DIFF PRESS     | ROSEMOUNT        | C071H | A       | SG261355 | H     | C071H BL |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*PNL30A  | REMOTE CONTROL PANEL          | NINE SAFETY APPL | P243U | A       | SG261356 | H     | P243UAG  |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*PNL30B  | REMOTE CONTROL PANEL          | NINE SAFETY APPL | P243U | A       | SG261355 | H     | P243UAH  |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*PV5A    | RX BLDG IN/OUT DIFF PRESS     | CLOW             | P304Y | A       | SG261356 | H     | P304YAJ  |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*PV5B    | RX BLDG IN/OUT DIFF PRESS     | CLOW             | P304Y | A       | SG261355 | H     | P304YAK  |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*SOV102  | PRIMARY CONT PURGE ISOL V     | TARGET ROCK      | P304X | A       | SC306179 | H     | P304XCC  |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*TEX26A  | FLTR TRAIN HTR INLET TEMP     | NINE SAFETY APPL | P243U | A       | SG261356 | H     | P243UAI  |
| REMARKS:     |                               |                  |       |         |          |       |          |
| 2GTS*TEX26B  | FLTR TRAIN HTR INLET TEMP     | NINE SAFETY APPL | P243U | A       | SG261355 | H     | P243UAJ  |
| REMARKS:     |                               |                  |       |         |          |       |          |



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PROJECT EQUIPMENT SYSTEM  
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| EQUIPMENT ID | DESCRIPTION                 | VENDOR NAME      | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-----------------------------|------------------|-------|---------|----------|-------|----------|
| *****        |                             |                  |       |         |          |       |          |
| 2GTS*TEY26A  | FLTR TRAIN HTR OUTLET TEMP  | NINE SAFETY APPL | P243U | A       | SG261356 | H     | P243UAK  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2GTS*TEY26B  | FLTR TRAIN HTR OUTLET TEMP  | NINE SAFETY APPL | P243U | A       | SG261355 | H     | P243UAL  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2GTS*TIS23A  | CHARCOAL ADSORB TEMP H      | NINE SAFETY APPL | P243U | A       | SG261356 | H     | P243UAN  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2GTS*TIS23B  | CHARCOAL ADSORB TEMP H      | NINE SAFETY APPL | P243U | A       | SG261355 | H     | P243UAN  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2GTS*TIS29A  | CROSS BLEED PIPE GAS TEMP H | HCC POWERS       | C071A | A       | SG261356 | H     | C071ABV  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2GTS*TIS29B  | CROSS BLEED PIPE GAS TEMP H | HCC POWERS       | C071A | A       | SG261355 | H     | C071ABW  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2GTS*TS24A   | *CH1A HTR TEMP CUTOUT       | NINE SAFETY APPL | P243U | A       | SG261356 | H     | P243UAO  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2GTS*TS24B   | *CH1B HTR TEMP CUTOUT       | NINE SAFETY APPL | P243U | A       | SG261355 | H     | P243UAP  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2GTS*XD1A    | XFMR 600-480V               | NINE SAFETY APPL | P243U | A       | SG261356 | H     | P243UAQ  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2GTS*XD1B    | XFMR 600V-480V              | NINE SAFETY APPL | P243U | A       | SG261355 | H     | P243UAR  |
| REMARKS:     |                             |                  |       |         |          |       |          |





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| EQUIPMENT ID | DESCRIPTION                                         | VENDOR NAME    | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-----------------------------------------------------|----------------|-------|---------|----------|-------|----------|
| 2HCS*IPNL22A | H2 RECOMB PHR CAB<br>REMARKS:                       | ROCKWELL INT"L | P282K | A       | ABN24033 | H     | P282KAA  |
| 2HCS*IPNL22B | H2 RECOMBINER CAB<br>REMARKS:                       | ROCKWELL INT"L | P282K | A       | ABS24036 | H     | P282KAB  |
| 2HCS*MOV1A   | RBNR1A OUTLET OUTBD ISOL<br>REMARKS:REG. GUIDE 1.97 | VELAN          | P304S | A       | SC215122 | H     | P304SAI  |
| 2HCS*MOV1B   | RBNR1A OUTLET OUTBD ISOL<br>REMARKS:REG. GUIDE 1.97 | VELAN          | P304S | A       | SC215122 | H     | P304SAJ  |
| 2HCS*MOV2A   | RBNR1A INLET OUTLBD ISOL<br>REMARKS:REG. GUIDE 1.97 | VELAN          | P304S | A       | SC215122 | H     | P304SAK  |
| 2HCS*MOV2B   | RBNR1A INLET OUTLBD ISOL<br>REMARKS:REG. GUIDE 1.97 | VELAN          | P304S | A       | SC215122 | H     | P304SAL  |
| 2HCS*MOV3A   | RBNR1A INLET OUTLBD ISOL<br>REMARKS:REG. GUIDE 1.97 | VELAN          | P304S | A       | SC240140 | H     | P304SAM  |
| 2HCS*MOV3B   | RBNR1B INLET OUTLBD ISOL<br>REMARKS:REG. GUIDE 1.97 | VELAN          | P304S | A       | SC240135 | H     | P304SAN  |
| 2HCS*MOV4A   | RBNR1A OUTLET INSD ISOL<br>REMARKS:REG. GUIDE 1.97  | VELAN          | P304S | A       | PC215121 | H     | P304SAO  |
| 2HCS*MOV4B   | RBNR1B OUTLET INSD ISOL<br>REMARKS:REG. GUIDE 1.97  | VELAN          | P304S | A       | PC215121 | H     | P304SAP  |
| 2HCS*MOV5A   | RBN1A INLET INSD ISOL<br>REMARKS:REG. GUIDE 1.97    | VELAN          | P304S | A       | PC215121 | H     | P304SAQ  |
| 2HCS*MOV5B   | RBN1B INLET INSD ISOL<br>REMARKS:REG. GUIDE 1.97    | VELAN          | P304S | A       | PC215121 | H     | P304SAR  |
| 2HCS*MOV6A   | RBN1A INLET INSD ISOL<br>REMARKS:REG. GUIDE 1.97    | VELAN          | P304S | A       | PC250621 | H     | P304SAS  |
| 2HCS*MOV6B   | RBN1B INLET INSD ISOL<br>REMARKS:REG. GUIDE 1.97    | VELAN          | P304S | A       | PC250629 | H     | P304SAT  |
| 2HCS*RBNR1A  | HYDROGEN RECOMB 1A<br>REMARKS:                      | ROCKWELL INT"L | P282K | A       | SC240135 | H     | P282KAC  |



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| EQUIPMENT ID | DESCRIPTION          | VENDOR NAME    | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|----------------------|----------------|-------|---------|----------|-------|----------|
| *****        |                      |                |       |         |          |       |          |
| 2HCS*RBNR1B  | HYDROGEN RECONB 1B   | ROCKWELL INT"L | P282K | A       | SC240135 | H     | P282KAD  |
| REMARKS:     |                      |                |       |         |          |       |          |
| 2HCS*SOV10A  | RBNR1A CLG WTR INLET | TARGET ROCK    | P304X | A       | SC240135 | H     | P304XCD  |
| REMARKS:     |                      |                |       |         |          |       |          |
| 2HCS*SOV10B  | RBNR1B CLG WTR INLET | TARGET ROCK    | P304X | A       | SC240135 | H     | P304XCE  |
| REMARKS:     |                      |                |       |         |          |       |          |
| 2HCS*SOV11A  | RBNR1A CLG WTR DRAIN | TARGET ROCK    | P304X | A       | SC240135 | H     | P304XCF  |
| REMARKS:     |                      |                |       |         |          |       |          |
| 2HCS*SOV11B  | RBNR1B CLG WTR DRAIN | TARGET ROCK    | P304X | A       | SC240135 | H     | P304XCG  |
| REMARKS:     |                      |                |       |         |          |       |          |



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| EQUIPMENT ID  | DESCRIPTION                                | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|---------------|--------------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****         |                                            |             |       |         |          |       |          |
| 2HTS*ACCIHTPA | HEAT TRACING PIPE ASSEMBLY                 | THERMON     | E092B | A       | ALL      | H     | E092BAC  |
| REMARKS:      |                                            |             |       |         |          |       |          |
| 2HTS*ACC3HTPA | HEAT TRACING PIPE ASSEMBLY                 | THERMON     | E092B | A       | ALL      | H     | E092BAD  |
| REMARKS:      |                                            |             |       |         |          |       |          |
| 2HTS*PNL001   | HEAT TRACING CONTROL PANEL                 | THERMON     | E092B | A       | ABN24033 | H     | E092BAA  |
| REMARKS:      |                                            |             |       |         |          |       |          |
| 2HTS*PNL003   | HEAT TRACING CONTROL PANEL                 | THERMON     | E092B | A       | ABS24036 | H     | E092BAB  |
| REMARKS:      |                                            |             |       |         |          |       |          |
| 2HTS*XD001    | HEAT TRACING XFNG 600V-240/120 SQUARE D CO |             | E011T | A       | ABN24033 | H     | E011TAE  |
| REMARKS:      |                                            |             |       |         |          |       |          |
| 2HTS*XD003    | HEAT TRACING XFNG 600V-240/120 SQUARE D CO |             | E011T | A       | ABS24036 | H     | E011TAF  |
| REMARKS:      |                                            |             |       |         |          |       |          |



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|--------------|----------------------------|------------------|-------|---------|----------|-------|----------|
| *****        |                            |                  |       |         |          |       |          |
| 2HVC*TIS20A  | FLT 2A INSTALLED SPARE     | MINE SAFETY APPL | P243U | A       | CB289392 | H     | P243UAS  |
| REMARKS:     |                            |                  |       |         |          |       |          |
| 2HVC*TIS20B  | FLT 2B INSTALLED SPARE     | MINE SAFETY APPL | P243U | A       | CB306326 | H     | P243UAT  |
| REMARKS:     |                            |                  |       |         |          |       |          |
| 2HVC*TIS64A  | *FLT2A CHARCOAL ADSRB TEMP | MINE SAFETY APPL | P243U | A       | CB289392 | H     | P243UAU  |
| REMARKS:     |                            |                  |       |         |          |       |          |
| 2HVC*TIS64B  | *FLT2B CHARCOAL ADSRB TEMP | MINE SAFETY APPL | P243U | A       | CB306326 | H     | P243UAV  |
| REMARKS:     |                            |                  |       |         |          |       |          |





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| EQUIPMENT ID | DESCRIPTION                                     | VENDOR NAME      | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------------------------------|------------------|-------|---------|----------|-------|----------|
| 2HVR*A0D1A   | SUPPLY AIR ISOL DMPR<br>REMARKS:REG. GUIDE 1.97 | PACIFIC AIR PROD | P413T | A       | SC289155 | H     | P413TAE  |
| 2HVR*A0D1B   | SUPPLY AIR ISOL DMPR<br>REMARKS:REG. GUIDE 1.97 | PACIFIC AIR PROD | P413T | A       | SC289155 | H     | P413TAF  |
| 2HVR*A0D10A  | EXH AIR ISOL DMPR<br>REMARKS:REG. GUIDE 1.97    | PACIFIC AIR PROD | P413T | A       | SC353202 | H     | P413TAK  |
| 2HVR*A0D10B  | EXH AIR ISOL DMPR<br>REMARKS:REG. GUIDE 1.97    | PACIFIC AIR PROD | P413T | A       | SC353202 | H     | P413TAL  |
| 2HVR*A0D204  | REAC HD EVAC FLT3 DISCH DMPR<br>REMARKS:        | PACIFIC AIR PROD | P413T | A       | SC289155 | H     | P413TAO  |
| 2HVR*A0D34A  | *UC413A TEST DMPR<br>REMARKS:                   | PACIFIC AIR PROD | P413T | A       | SC289155 | H     | P413TAN  |
| 2HVR*A0D34B  | UC413B TEST DMPR<br>REMARKS:                    | PACIFIC AIR PROD | P413T | A       | SC289155 | H     | P413TAN  |
| 2HVR*A0D6A   | *UC413A INLET DMPR<br>REMARKS:REG. GUIDE 1.97   | PACIFIC AIR PROD | P413T | A       | SC289155 | H     | P413TAG  |
| 2HVR*A0D6B   | *UC413B INLET DMPR<br>REMARKS:REG. GUIDE 1.97   | PACIFIC AIR PROD | P413T | A       | SC289155 | H     | P413TAH  |
| 2HVR*A0D9A   | EXH AIR ISOL DMPR<br>REMARKS:REG. GUIDE 1.97    | PACIFIC AIR PROD | P413T | A       | SC306181 | H     | P413TAI  |
| 2HVR*A0D9B   | EXH AIR ISOL DMPR<br>REMARKS:REG. GUIDE 1.97    | PACIFIC AIR PROD | P413T | A       | SC306181 | H     | P413TAJ  |
| 2HVR*CAB14A  | RX BLDG ABV REFUEL FL FADN<br>REMARKS:          | KAHAN            | P281F | A       | SC328187 | H     | P281FAC  |
| 2HVR*CAB14B  | RX BLDG ABV REFUEL FL FADN<br>REMARKS:          | KAHAN            | P281F | A       | SC328187 | H     | P281FAD  |
| 2HVR*CAB32A  | RX BLDG BLW REFUEL FL RADN<br>REMARKS:          | KAHAN            | P281F | A       | SC289155 | H     | P281FAE  |
| 2HVR*CAB32B  | RX BLDG BLW REFUEL FL RADN<br>REMARKS:          | KAHAN            | P281F | A       | SC289155 | H     | P281FAF  |



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|--------------|------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                        | *****       | ***** | *****   | *****    | ***** | *****    |
| 2HVR*FE18A   | RX BLDG ENERG RECIRC UC413 A | MCC POWERS  | C071A | A       | SC289155 | H     | C071ABN  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*FE18B   | RX BLDG ENERG RECIRC UC413B  | MCC POWERS  | C071A | A       | SC289155 | H     | C071ABO  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*FE18C   | RX BLDG ENERG RECIRC UC413A  | MCC POWERS  | C071A | A       | SC289155 | H     | C071ABP  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*FE18D   | RX BLDG ENERG RECIRC UC413B  | MCC POWERS  | C071A | A       | SC289155 | H     | C071ABQ  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*FE36A   | ABV REFUEL FLAIR FLOW        | MCC POWERS  | C071A | A       | SC353202 | H     | C071ABR  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*FE36B   | ABV REFUEL FLAIR FLOW        | MCC POWERS  | C071A | A       | SC353202 | H     | C071ABS  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*FE37A   | BLW REFUEL FLAIR FLOW        | MCC POWERS  | C071A | A       | SC289155 | H     | C071ABT  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*FE37B   | BLW REFUEL FLAIR FLOW        | MCC POWERS  | C071A | A       | SC289155 | H     | C071ABU  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*SOV236  | GLOBE VALVE                  | TARGET ROCK | P304X | A       | SC289155 | H     | P304XCJ  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*TIS115  | RHR HT EX RH B *UC406        | MCC POWERS  | C071A | A       | ABS17510 | H     | C071ABL  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*TIS116  | RHR HT EX RH A *UC405        | MCC POWERS  | C071A | A       | ABN17505 | H     | C071ABH  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*TIS16A  | ELEC MCC AREA UC409A         | MCC POWERS  | C071A | A       | ABS24036 | H     | C071AAA  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*TIS16B  | ELEC MCC AREA UC409B         | MCC POWERS  | C071A | A       | ABS24036 | H     | C071AAB  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*TIS19A  | ELEC MCC AREA*UC408A         | MCC POWERS  | C071A | A       | ABN24033 | H     | C071AAC  |
| REMARKS:     |                              |             |       |         |          |       |          |
| 2HVR*TIS19B  | ELEC MCC AREA*UC408B         | MCC POWERS  | C071A | A       | ABN24033 | H     | C071AAD  |
| REMARKS:     |                              |             |       |         |          |       |          |



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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION            | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                  | *****       | ***** | *****   | *****    | ***** | *****    |
| 2HVR*TIS22A  | LPCS PP RH *UC402A     | HCC POWERS  | C071A | A       | ABN17503 | H     | C071AAE  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS22B  | LPCS PP RH *UC402B     | HCC POWERS  | C071A | A       | ABN17503 | H     | C071AAF  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS23A  | RHR PP RH A *UC401A    | HCC POWERS  | C071A | A       | ABN17504 | H     | C071AAG  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS23B  | RHR PP RH C *UC401B    | HCC POWERS  | C071A | A       | ABS17508 | H     | C071AAH  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS23C  | RHR PP RH B *UC401C    | HCC POWERS  | C071A | A       | ABS17509 | H     | C071AAI  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS23D  | RHR PP RH A *UC401D    | HCC POWERS  | C071A | A       | ABN17504 | H     | C071AAJ  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS23E  | RHR PP RH C *UC401E    | HCC POWERS  | C071A | A       | ABS17508 | H     | C071AAK  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS23F  | RHR PP RH B *UC401F    | HCC POWERS  | C071A | A       | ABS17509 | H     | C071AAL  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS24A  | HPCS PP RH *UC403A     | HCC POWERS  | C071A | A       | SC175108 | H     | C071AAH  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS24B  | HPCS PP RH *UC403B     | HCC POWERS  | C071A | A       | SC175108 | H     | C071AAN  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS25A  | GEN AREA EL175 *UC404A | HCC POWERS  | C071A | A       | SC196116 | H     | C071AAO  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS25B  | GEN AREA EL175 *UC404B | HCC POWERS  | C071A | A       | SC196113 | H     | C071AAP  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS25C  | GEN AREA EL175 *UC404C | HCC POWERS  | C071A | A       | SC196113 | H     | C071AAQ  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS25D  | GEN AREA EL175 *UC404D | HCC POWERS  | C071A | A       | SC196116 | H     | C071AAR  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS26A  | GEN AREA EL215 *UC407A | HCC POWERS  | C071A | A       | SC215122 | H     | C071AAS  |
| REMARKS:     |                        |             |       |         |          |       |          |



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JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION            | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                  | *****       | ***** | *****   | *****    | ***** | *****    |
| 2HVR*TIS26B  | GEN AREA EL215 *UC407B | HCC POWERS  | C071A | A       | SC215122 | H     | C071AAT  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS26C  | GEN AREA EL215 *UC407C | HCC POWERS  | C071A | A       | SC215122 | H     | C071AAU  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS26D  | GEN AREA EL215 *UC407D | HCC POWERS  | C071A | A       | SC215122 | H     | C071AAV  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS26E  | GEN AREA EL215 *UC407E | HCC POWERS  | C071A | A       | SC215122 | H     | C071AAH  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS27A  | GEN AREA EL240 *UC410A | HCC POWERS  | C071A | A       | SC240135 | H     | C071AAX  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS27B  | GEN AREA EL240 *UC410B | HCC POWERS  | C071A | A       | SC240135 | H     | C071AAY  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS27C  | GEN AREA EL240 *UC410C | HCC POWERS  | C071A | A       | SC240135 | H     | C071AAZ  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS28A  | GEN AREA EL261 *UC411A | HCC POWERS  | C071A | A       | SC261145 | H     | C071ABA  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS28B  | GEN AREA EL261 *UC411B | HCC POWERS  | C071A | A       | SC261145 | H     | C071ABB  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS28C  | GEN AREA EL261 *UC411C | HCC POWERS  | C071A | A       | SC261145 | H     | C071ABC  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS30A  | GEN AREA EL261 *UC412A | HCC POWERS  | C071A | A       | SC175106 | H     | C071ABD  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS30B  | GEN AREA EL261 *UC412B | HCC POWERS  | C071A | A       | SC175106 | H     | C071ABE  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS31A  | UC413A INLET TEMP      | HCC POWERS  | C071A | A       | SC289155 | H     | C071ABF  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS31B  | UC413B INLET TEMP      | HCC POWERS  | C071A | A       | SC289155 | H     | C071ABG  |
| REMARKS:     |                        |             |       |         |          |       |          |
| 2HVR*TIS35A  | GEN AREA EL261*UC414A  | HCC POWERS  | C071A | A       | SC261145 | H     | C071ABH  |
| REMARKS:     |                        |             |       |         |          |       |          |





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JOB NAME NINE HILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                 | VENDOR NAME      | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-----------------------------|------------------|-------|---------|----------|-------|----------|
| *****        |                             |                  |       |         |          |       |          |
| 2HVR*TIS35B  | GEN AREA EL261*UC414B       | NCC POWERS       | C071A | A       | SC261145 | H     | C071ABI  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*TIS38A  | GTS RH A *UC415A            | NCC POWERS       | C071A | A       | SG261355 | H     | C071ABJ  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*TIS38B  | GTS RH A *UC415B            | NCC POWERS       | C071A | A       | SG261356 | H     | C071ABK  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC401A  | RHR PUMP RH A - UNIT CLR    | AMERICAN AIR FLT | P412H | A       | ABN17504 | H     | P412HAA  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC401B  | RHR PUMP RH C - UNIT CLR    | AMERICAN AIR FLT | P412H | A       | ABS17508 | H     | P412HAB  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC401C  | RHR PUMP RH B - UNIT CLR    | AMERICAN AIR FLT | P412H | A       | ABS17509 | H     | P412HAC  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC401D  | RHR PUMP RH A - UNIT CLR    | AMERICAN AIR FLT | P412H | A       | ABN17504 | H     | P412HAD  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC401E  | RHR PUMP RH C - UNIT CLR    | AMERICAN AIR FLT | P412H | A       | ABS17508 | H     | P412HAE  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC401F  | RHR PUMP RH B - UNIT CLR    | AMERICAN AIR FLT | P412H | A       | ABS17509 | H     | P412HAF  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC402A  | LPCS PUMP RH UNIT CLR       | AMERICAN AIR FLT | P412H | A       | ABN17503 | H     | P412HAG  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC402B  | LPCS PUMP RH UNIT CLR       | AMERICAN AIR FLT | P412H | A       | ABN17503 | H     | P412HAH  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC403A  | HPCS PUMP RH UNIT CLR       | AMERICAN AIR FLT | P412H | A       | SC175108 | H     | P412HAJ  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC403B  | HPCS PUMP RH UNIT CLR       | AMERICAN AIR FLT | P412H | A       | SC196116 | H     | P412HAK  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC404A  | RB EL 175 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC196116 | H     | P412HAL  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC404B  | RB EL 175 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC196113 | H     | P412HAN  |
| REMARKS:     |                             |                  |       |         |          |       |          |



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JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                 | VENDOR NAME      | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-----------------------------|------------------|-------|---------|----------|-------|----------|
| 2HVR*UC404C  | RB EL 175 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC196113 | H     | P412HAN  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC404D  | RB EL 175 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC196116 | H     | P412HAP  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC405   | RHR HEAT EXCH RH UNIT CLR   | AMERICAN AIR FLT | P412H | A       | ABN19615 | H     | P412HAQ  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC406   | RHR HEAT EXCH RH UNIT CLR   | AMERICAN AIR FLT | P412H | A       | ABS19620 | H     | P412HAR  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC407A  | RB EL 215 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC215122 | H     | P412HAS  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC407B  | RB EL 215 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC215122 | H     | P412HAT  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC407C  | RB EL 215 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC215122 | H     | P412HAU  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC407D  | RB EL 215 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC215122 | H     | P412HAV  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC407E  | RB EL 215 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC215122 | H     | P412HAW  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC408A  | ELEC MCC AREA UNIT CLR      | AMERICAN AIR FLT | P412H | A       | ABN24033 | H     | P412HAX  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC408B  | ELEC MCC AREA UNIT CLR      | AMERICAN AIR FLT | P412H | A       | ABN24033 | H     | P412HAY  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC409A  | ELEC MCC AREA UNIT CLR      | AMERICAN AIR FLT | P412H | A       | ABS24036 | H     | P412HAZ  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC409B  | ELEC MCC AREA UNIT CLR      | AMERICAN AIR FLT | P412H | A       | ABS24036 | H     | P412HBA  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC410A  | RB EL 240 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC240135 | H     | P412HBB  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC410B  | RB EL 240 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC240135 | H     | P412HBC  |
| REMARKS:     |                             |                  |       |         |          |       |          |



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J.O.NO. 1217700  
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JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
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REPORT DATE 03/25/86  
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| EQUIPMENT ID | DESCRIPTION                 | VENDOR NAME      | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-----------------------------|------------------|-------|---------|----------|-------|----------|
| *****        | *****                       | *****            | ***** | *****   | *****    | ***** | *****    |
| 2HVR*UC410C  | RB EL 240 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC240135 | H     | P412HSD  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC411A  | RB EL 261 GEN AREA UNIT CLR | AMERICAN AIR FLT | P412H | A       | SC261145 | H     | P412HBE  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC411B  | RB SPACE COOLER ELEV 261    | AMERICAN AIR FLT | P412H | A       | SC261145 | H     | P412HBF  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC411C  | RB SPACE COOLER ELEV 261    | AMERICAN AIR FLT | P412H | A       | SC261145 | H     | P412HBG  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC412A  | RCIC PUMP ROOM UNIT CLR     | AMERICAN AIR FLT | P412H | A       | SC175106 | H     | P412HBH  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC412B  | RCIC PUMP ROOM UNIT CLR     | AMERICAN AIR FLT | P412H | A       | SC175106 | H     | P412HBJ  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC413A  | EMERGENCY RECIRC UNIT CLR   | AMERICAN AIR FLT | P412H | A       | SC289155 | H     | P412HBK  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC413B  | EMERGENCY RECIRC UNIT CLR   | AMERICAN AIR FLT | P412H | A       | SC289155 | H     | P412HBL  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC414A  | EL 261 GEN AREA UNIT CLR    | AMERICAN AIR FLT | P412H | A       | SC261145 | H     | P412HBM  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC414B  | EL 261 GEN AREA UNIT CLR    | AMERICAN AIR FLT | P412H | A       | SC261145 | H     | P412HBN  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC415A  | SG SPACE COOLER EL261       | AMERICAN AIR FLT | P412H | A       | SG261356 | H     | P412HBP  |
| REMARKS:     |                             |                  |       |         |          |       |          |
| 2HVR*UC415B  | SG SPACE COOLER EL261       | AMERICAN AIR FLT | P412H | A       | SG261355 | H     | P412HBSQ |
| REMARKS:     |                             |                  |       |         |          |       |          |



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SYS -- IAS  
REPORT NO. NIP815

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
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| EQUIPMENT ID | DESCRIPTION                                        | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|----------------------------------------------------|-------------|-------|---------|----------|-------|----------|
| 2IAS*PT181   | ADS HEADER A PRESSURE<br>REMARKS:REG. GUIDE 1.97   | ROSEMOUNT   | C071H | A       | SC289155 | H     | C071HAN  |
| 2IAS*PT186   | ADS HEADER B PRESSURE<br>REMARKS:REG. GUIDE 1.97   | ROSEMOUNT   | C071H | A       | SC289155 | H     | C071HAN  |
| 2IAS*PT230   | ADS ACCUMULATOR TK32<br>REMARKS:REG. GUIDE 1.97    | ROSEMOUNT   | C071H | A       | SC289155 | H     | C071HAO  |
| 2IAS*PT231   | ADS ACCUMULATOR TK33<br>REMARKS:REG. GUIDE 1.97    | ROSEMOUNT   | C071H | A       | SC289155 | H     | C071HAP  |
| 2IAS*PT232   | ADS ACCUMULATOR TK34<br>REMARKS:REG. GUIDE 1.97    | ROSEMOUNT   | C071H | A       | SC289155 | H     | C071HAQ  |
| 2IAS*PT233   | ADS ACCUMULATOR TK35<br>REMARKS:REG. GUIDE 1.97    | ROSEMOUNT   | C071H | A       | SC306175 | H     | C071HAR  |
| 2IAS*PT234   | ADS ACCUMULATOR TK36<br>REMARKS:REG. GUIDE 1.97    | ROSEMOUNT   | C071H | A       | SC306175 | H     | C071HAS  |
| 2IAS*PT235   | ADS ACCUMULATOR TK37<br>REMARKS:REG. GUIDE 1.97    | ROSEMOUNT   | C071H | A       | SC306175 | H     | C071HAT  |
| 2IAS*PT236   | ADS ACCUMULATOR TK38<br>REMARKS:REG. GUIDE 1.97    | ROSEMOUNT   | C071H | A       | SC306175 | H     | C071HAU  |
| 2IAS*SOVX181 | ADS HEADER A PRESSURE<br>REMARKS:                  | TARGET ROCK | P304X | A       | SC289155 | H     | P304XCS  |
| 2IAS*SOVX186 | ADS HEADER B PRESSURE<br>REMARKS:                  | TARGET ROCK | P304X | A       | SC289155 | H     | P304XCT  |
| 2IAS*SOVY181 | ADS HEADER A PRESSURE<br>REMARKS:                  | TARGET ROCK | P304X | A       | SC289155 | H     | P304XCU  |
| 2IAS*SOVY186 | ADS HEADER B PRESSURE<br>REMARKS:                  | TARGET ROCK | P304X | A       | SC289155 | H     | P304XCV  |
| 2IAS*SOV164  | INSTR AIR CONTHT ISOL V<br>REMARKS:REG. GUIDE 1.97 | TARGET ROCK | P304X | A       | SC289155 | H     | P304XCK  |
| 2IAS*SOV165  | INSTR AIR CONTHT ISOL V<br>REMARKS:REG. GUIDE 1.97 | TARGET ROCK | P304X | A       | SC289155 | H     | P304XCL  |





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J.O.NO. 1217700  
JOB NAME NINE HILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID            | DESCRIPTION             | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|-------------------------|-------------------------|-------------|-------|---------|----------|-------|----------|
| *****                   |                         |             |       |         |          |       |          |
| 2IAS*SOV166             | INSTR AIR CONTHT ISOL V | TARGET ROCK | P304X | A       | SC289155 | H     | P304XCH  |
| REMARKS:REG. GUIDE 1.97 |                         |             |       |         |          |       |          |
| 2IAS*SOV167             | INSTR AIR CONTHT ISOL V | TARGET ROCK | P304X | A       | SC240135 | H     | P304XCN  |
| REMARKS:REG. GUIDE 1.97 |                         |             |       |         |          |       |          |
| 2IAS*SOV168             | INSTR AIR CONTHT ISOL V | TARGET ROCK | P304X | A       | SC289155 | H     | P304XCO  |
| REMARKS:REG. GUIDE 1.97 |                         |             |       |         |          |       |          |
| 2IAS*SOV180             | INSTR AIR CONTHT ISOL V | TARGET ROCK | P304X | A       | PC289681 | H     | P304XCP  |
| REMARKS:REG. GUIDE 1.97 |                         |             |       |         |          |       |          |
| 2IAS*SOV184             | INSTR AIR CONTHT ISOL V | TARGET ROCK | P304X | A       | PC289681 | H     | P304XCQ  |
| REMARKS:REG. GUIDE 1.97 |                         |             |       |         |          |       |          |
| 2IAS*SOV185             | INSTR AIR CONTHT ISOL V | TARGET ROCK | P304X | A       | PC240603 | H     | P304XCR  |
| REMARKS:REG. GUIDE 1.97 |                         |             |       |         |          |       |          |



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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID            | DESCRIPTION                          | VENDOR NAME    | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|-------------------------|--------------------------------------|----------------|-------|---------|----------|-------|----------|
| 2ICS*AOV109             | TURB EXH DR ISOL                     | COPEES-VULCAN  | C051H | A       | SC175106 | H     | C051HAB  |
| REMARKS:                |                                      |                |       |         |          |       |          |
| 2ICS*AOV110             | TURB EXH DR ISOL                     | COPEES-VULCAN  | C051H | A       | SC175106 | H     | C051HAC  |
| REMARKS:                |                                      |                |       |         |          |       |          |
| 2ICS*AOV130             | ST LINE DR ISOL                      | COPEES-VULCAN  | C051H | A       | SC175106 | H     | C051HAD  |
| REMARKS:                |                                      |                |       |         |          |       |          |
| 2ICS*AOV131             | ST LINE DR ISOL                      | COPEES-VULCAN  | C051H | A       | SC175106 | H     | C051HAE  |
| REMARKS:                |                                      |                |       |         |          |       |          |
| 2ICS*AOV156             | TESTABLE CHECK V                     | ANCHOR/DARLING | P303H | A       | SC289155 | H     | P303HAC  |
| REMARKS:REG. GUIDE 1.97 |                                      |                |       |         |          |       |          |
| 2ICS*AOV157             | TESTABLE CHECK V                     | ANCHOR/DARLING | P303H | A       | PC328185 | H     | P303HAD  |
| REMARKS:REG. GUIDE 1.97 |                                      |                |       |         |          |       |          |
| 2ICS*FV108              | TEST BYP TO CNDS STOR TK             | COPEES-VULCAN  | C051H | A       | SC175106 | H     | C051HAF  |
| REMARKS:                |                                      |                |       |         |          |       |          |
| 2ICS*NOV116             | RCIC TURB COOLING WATER SUPPLY VELAN |                | P304R | A       | SC175106 | H     | P304RBC  |
| REMARKS:                |                                      |                |       |         |          |       |          |
| 2ICS*NOV120             | RCIC STEAM SPLY V TO TURBINE         | VELAN          | P304R | A       | SC175106 | H     | P304RBD  |
| REMARKS:                |                                      |                |       |         |          |       |          |
| 2ICS*NOV121             | STEAM SPLY LINE ISOL V (OUTBD)       | VELAN          | P304R | A       | SC261150 | H     | P304RBE  |
| REMARKS:REG. GUIDE 1.97 |                                      |                |       |         |          |       |          |
| 2ICS*NOV122             | RCIC TURB EXH TO SUPPR POOL          | VELAN          | P304R | A       | SC196118 | H     | P304RBF  |
| REMARKS:REG. GUIDE 1.97 |                                      |                |       |         |          |       |          |
| 2ICS*NOV124             | RCIC TEST FCV TO CNDS STOR TK.       | VELAN          | P304R | A       | SC175106 | H     | P304RBG  |
| REMARKS:                |                                      |                |       |         |          |       |          |
| 2ICS*NOV126             | RCIC INJECTION SHUTOFF VALVE         | VELAN          | P304R | A       | SC289155 | H     | P304RBH  |
| REMARKS:REG. GUIDE 1.97 |                                      |                |       |         |          |       |          |
| 2ICS*NOV128             | RCIC ST SPLY LINE ISOL V             | VELAN          | P304R | A       | PC261649 | H     | P304RBI  |
| REMARKS:REG. GUIDE 1.97 |                                      |                |       |         |          |       |          |
| 2ICS*NOV129             | PUMP SUCT FROM CNDS STOR TANK        | VELAN          | P304R | A       | ABN24031 | H     | P304RBJ  |
| REMARKS:                |                                      |                |       |         |          |       |          |



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J.O.NO. 1217700  
JOB NAME NINE HILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                   | VENDOR NAME  | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------------|--------------|-------|---------|----------|-------|----------|
| *****        | *****                         | *****        | ***** | *****   | *****    | ***** | *****    |
| 2ICS*MOV136  | RCIC PHP SUCT FROM SUPPR POOL | VELAN        | P304R | A       | SC196117 | H     | P304RBK  |
|              | REMARKS:REG. GUIDE 1.97       |              |       |         |          |       |          |
| 2ICS*MOV143  | RCIC MIN FLOW TO SUPPR POOL   | VELAN        | P304R | A       | SC196117 | H     | P304RBL  |
|              | REMARKS:REG. GUIDE 1.97       |              |       |         |          |       |          |
| 2ICS*MOV148  | RCIC VAC BRKR ISOL V (INSRD)  | VELAN        | P304S | A       | SC196118 | H     | P304SAU  |
|              | REMARKS:REG. GUIDE 1.97       |              |       |         |          |       |          |
| 2ICS*MOV159  | RCIC BYPASS TO STEAM SUPPLY   | VELAN        | P304R | A       | SC175106 | H     | P304RBH  |
|              | REMARKS:                      |              |       |         |          |       |          |
| 2ICS*MOV164  | RCIC VAC BRKR ISOL V (OUTBRD) | VELAN        | P304S | A       | SC196118 | H     | P304SAV  |
|              | REMARKS:REG. GUIDE 1.97       |              |       |         |          |       |          |
| 2ICS*MOV170  | RCIC STEAM LINE WARM-UP       | VELAN        | P304R | A       | PC261649 | H     | P304RBN  |
|              | REMARKS:REG. GUIDE 1.97       |              |       |         |          |       |          |
| 2ICS*N2      | RCIC SYS PRESSURE MOTOR       | GOULDS PUMPS | P222X | A       | SC175106 | H     | P222XAC  |
|              | REMARKS:                      |              |       |         |          |       |          |
| 2ICS*PCV115  | LUBE OIL CLR PRESS CONT V     | COPES-VULCAN | C051H | A       | SC175106 | H     | C051HAG  |
|              | REMARKS:                      |              |       |         |          |       |          |
| 2ICS*PNL115  | LUBE OIL CLR PRESS CONT VLV   | COPES-VULCAN | C051H | A       | ABN24033 | H     | C051HAP  |
|              | REMARKS:                      |              |       |         |          |       |          |
| 2ICS*PT115   | LUBE OIL CLR PRESS CONT VLV   | ROSEMOUNT    | C071H | A       | SC175105 | H     | C071HCC  |
|              | REMARKS:                      |              |       |         |          |       |          |



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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                   | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                               |             |       |         |          |       |          |
| 2ISC*SOV119  | SOLENOID OPERATED VALVE       | TARGET ROCK | P304X | A       | SC240135 | H     | P304XCH  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2ISC*SOV120  | SOLENOID OPERATED VALVE       | TARGET ROCK | P304X | A       | SC240135 | H     | P304XCX  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2ISC*SOV123  | SOLENOID OPERATED GLOBE VALVE | TARGET ROCK | P304X | A       | SC240135 | H     | P304XCY  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2ISC*SOV124  | SOLENOID OPERATED GLOBE VALVE | TARGET ROCK | P304X | A       | SC240135 | H     | P304XCZ  |
| REMARKS:     |                               |             |       |         |          |       |          |





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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                         | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-----------------------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                                                     |             |       |         |          |       |          |
| 2LHS*SOV152  | DRYHELL PRESS INB ISOL<br>REMARKS:REG. GUIDE 1.97   | TARGET ROCK | P304X | A       | PC299699 | H     | P304XDA  |
| 2LHS*SOV153  | DRYHELL PRESS OUT ISOL<br>REMARKS:REG. GUIDE 1.97   | TARGET ROCK | P304X | A       | SC289155 | H     | P304XDB  |
| 2LHS*SOV156  | SUPP CHMB PRESS INB ISOL<br>REMARKS:REG. GUIDE 1.97 | TARGET ROCK | P304X | A       | PC215121 | H     | P304XDC  |
| 2LHS*SOV157  | SUPP CHMB PRESS OUT ISOL<br>REMARKS:REG. GUIDE 1.97 | TARGET ROCK | P304X | A       | SC215130 | H     | P304XDD  |



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J.O.NO. 1217700  
JOB NAME NINE HILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                          | VENDOR NAME   | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|------------------------------------------------------|---------------|-------|---------|----------|-------|----------|
| 2HSS*HYV6A   | HN STH LINE A INBD ISOLV<br>REMARKS:REG. GUIDE 1.97  | FLUID SYSTEMS | P303D | A       | PC250619 | H     | P303DAA  |
| 2HSS*HYV6B   | HN STH LINE B INBD ISOLV<br>REMARKS:REG. GUIDE 1.97  | FLUID SYSTEMS | P303D | A       | PC250619 | H     | P303DAB  |
| 2HSS*HYV6C   | HN STH LINE C INBD ISOLV<br>REMARKS:REG. GUIDE 1.97  | FLUID SYSTEMS | P303D | A       | PC250619 | H     | P303DAC  |
| 2HSS*HYV6D   | HN STH LINE D INBD ISOL V<br>REMARKS:REG. GUIDE 1.97 | FLUID SYSTEMS | P303D | A       | PC250619 | H     | P303DAD  |
| 2HSS*HYV7A   | HN STH LINE A OUTBD HSIV<br>REMARKS:REG. GUIDE 1.97  | FLUID SYSTEMS | P303D | A       | HST24045 | H     | P303DAE  |
| 2HSS*HYV7B   | HN STH LINE B OUTBD HSIV<br>REMARKS:REG. GUIDE 1.97  | FLUID SYSTEMS | P303D | A       | HST24045 | H     | P303DAF  |
| 2HSS*HYV7C   | HN STH LINE C OUTBD HSIV<br>REMARKS:REG. GUIDE 1.97  | FLUID SYSTEMS | P303D | A       | HST24045 | H     | P303DAG  |
| 2HSS*HYV7D   | HN STH LINE D OUTBD HSIV<br>REMARKS:REG. GUIDE 1.97  | FLUID SYSTEMS | P303D | A       | HST24045 | H     | P303DAH  |
| 2HSS*IPNL90A | RELAY LOGIC CAB 2HSS*HVV6A<br>REMARKS:               | FLUID SYSTEMS | P303D | A       | ABS24036 | H     | P303DAI  |
| 2HSS*IPNL90B | RELAY LOGIC CAB 2HSS*HVV6B<br>REMARKS:               | FLUID SYSTEMS | P303D | A       | ABS24036 | H     | P303DAJ  |
| 2HSS*IPNL90C | RELAY LOGIC CAB 2HSS*HVV6C<br>REMARKS:               | FLUID SYSTEMS | P303D | A       | ABS24036 | H     | P303DAK  |
| 2HSS*IPNL90D | RELAY LOGIC CAB 2HSS*HVV6D<br>REMARKS:               | FLUID SYSTEMS | P303D | A       | ABS24036 | H     | P303DAL  |
| 2HSS*IPNL91A | RELAY LOGIC CAB 2HSS*HVV7AN/A<br>REMARKS:            | FLUID SYSTEMS | P303D | A       | ABN24033 | H     | P303DAN  |
| 2HSS*IPNL91B | RELAY LOGIC CAB 2HSS*HVV7B<br>REMARKS:               | FLUID SYSTEMS | P303D | A       | ABN24033 | H     | P303DAN  |
| 2HSS*IPNL91C | RELAY LOGIC CAB 2HSS*HVV7C<br>REMARKS:               | FLUID SYSTEMS | P303D | A       | ABN24033 | H     | P303DAO  |



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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID            | DESCRIPTION                | VENDOR NAME   | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|-------------------------|----------------------------|---------------|-------|---------|----------|-------|----------|
| *****                   |                            |               |       |         |          |       |          |
| 2HSS*IPNL91D            | RELAY LOGIC CAB 2HSS*HVV7C | FLUID SYSTEMS | P303D | A       | ASN24033 | H     | P303DAP  |
| REMARKS:                |                            |               |       |         |          |       |          |
| 2HSS*MOV111             | HN STEAM DRN INBD ISOL V   | VELAN         | P304R | A       | PC240601 | H     | P304RBP  |
| REMARKS:REG. GUIDE 1.97 |                            |               |       |         |          |       |          |
| 2HSS*MOV112             | HN STEAM DRN OUTBD ISOL V  | VELAN         | P304R | A       | HST24045 | H     | P304RBQ  |
| REMARKS:REG. GUIDE 1.97 |                            |               |       |         |          |       |          |
| 2HSS*MOV208             | ISBD HSIV DRN ISOL V       | VELAN         | P304R | A       | HST24045 | H     | P304RBV  |
| REMARKS:REG. GUIDE 1.97 |                            |               |       |         |          |       |          |
| 2HSS*SOV97A             | BTKN HSIV LINE DR V        | TARGET ROCK   | P304X | A       | HST24045 | H     | P304XDE  |
| REMARKS:                |                            |               |       |         |          |       |          |
| 2HSS*SOV97B             | BTKN HSIV LINE DR V        | TARGET ROCK   | P304X | A       | HST24045 | H     | P304XDF  |
| REMARKS:                |                            |               |       |         |          |       |          |
| 2HSS*SOV97C             | BTKN HSIV LINE DR V        | TARGET ROCK   | P304X | A       | HST24045 | H     | P304XDG  |
| REMARKS:                |                            |               |       |         |          |       |          |
| 2HSS*SOV97D             | BTKN HSIV LINE DR V        | TARGET ROCK   | P304X | A       | HST24045 | H     | P304XDH  |
| REMARKS:                |                            |               |       |         |          |       |          |
| 2HSS*TE149              | REAC HEAD VENT TEIP        | PYCO          | H070A | A       | PC299697 | H     | H070AAA  |
| REMARKS:                |                            |               |       |         |          |       |          |



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SYS -- RCS  
REPORT NO. NMP815

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                              | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|----------------------------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                                                    | *****       | ***** | *****   | *****    | ***** | *****    |
| 2RCS*SOV104  | 2RCS-PIA DISCH SMP INBD ISOL<br>REMARKS:REG. GUIDE 1.97  | TARGET ROCK | P304X | A       | PC261641 | H     | P304X0Y  |
| 2RCS*SOV105  | 2RCS-PIA DISCH SMP OUTBD ISOL<br>REMARKS:REG. GUIDE 1.97 | TARGET ROCK | P304X | A       | SC261145 | H     | P304X0Z  |
| 2RCS*SOV65A  | RCS HYDR LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97        | TARGET ROCK | P304X | A       | SC261145 | H     | P304X0I  |
| 2RCS*SOV65B  | RCS HYDR LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97        | TARGET ROCK | P304X | A       | SC261145 | H     | P304X0J  |
| 2RCS*SOV66A  | RCS HYDR LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97        | TARGET ROCK | P304X | A       | SC261145 | H     | P304X0K  |
| 2RCS*SOV66B  | RCS HYDR LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97        | TARGET ROCK | P304X | A       | SC261145 | H     | P304X0L  |
| 2RCS*SOV67A  | RCS HYDR LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97        | TARGET ROCK | P304X | A       | SC261145 | H     | P304X0H  |
| 2RCS*SOV67B  | RCS HYDR LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97        | TARGET ROCK | P304X | A       | SC261145 | H     | P304X0N  |
| 2RCS*SOV68A  | RCS HYDR LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97        | TARGET ROCK | P304X | A       | SC261145 | H     | P304X0O  |
| 2RCS*SOV68B  | RCS HYDR LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97        | TARGET ROCK | P304X | A       | SC261145 | H     | P304X0P  |
| 2RCS*SOV79A  | RCS INBD HYD LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97    | TARGET ROCK | P304X | A       | PC261644 | H     | P304X0Q  |
| 2RCS*SOV79B  | RCS INBD HYD LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97    | TARGET ROCK | P304X | A       | PC261649 | H     | P304X0R  |
| 2RCS*SOV30A  | RCS INBD HYD LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97    | TARGET ROCK | P304X | A       | PC261644 | H     | P304X0S  |
| 2RCS*SOV80B  | RCS INBD HYD LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97    | TARGET ROCK | P304X | A       | PC261649 | H     | P304X0T  |
| 2RCS*SOV81A  | RCS INBD HYD LINE ISOL SOV<br>REMARKS:REG. GUIDE 1.97    | TARGET ROCK | P304X | A       | PC261644 | H     | P304X0U  |





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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/29/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID            | DESCRIPTION                | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|-------------------------|----------------------------|-------------|-------|---------|----------|-------|----------|
| *****                   |                            |             |       |         |          |       |          |
| 2RCS*SOV81B             | RCS INSD HYD LINE ISOL SOV | TARGET ROCK | P304X | A       | PC261649 | H     | P304XDV  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2RCS*SOV82A             | RCS INBD HYD LINE ISOL SOV | TARGET ROCK | P304X | A       | PC261644 | H     | P304XDH  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |
| 2RCS*SOV82B             | RCS INBD HYD LINE ISOL SOV | TARGET ROCK | P304X | A       | PC261649 | H     | P304XDX  |
| REMARKS:REG. GUIDE 1.97 |                            |             |       |         |          |       |          |



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SYS -- RHS  
REPORT NO. NHP815

J.O.NO. 1217700  
JOB NAME NINE HILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZHIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                    | VENDOR NAME    | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|--------------------------------|----------------|-------|---------|----------|-------|----------|
| *****        |                                |                |       |         |          |       |          |
| 2RHS*AOV16A  | RHR A TESTABLE CHECK VALVE     | ANCHOR/DARLING | P303H | A       | PC306711 | H     | P303HAE  |
|              | REMARKS:REG. GUIDE 1.97        |                |       |         |          |       |          |
| 2RHS*AOV16B  | RHR B TESTABLE CHECK VALVE     | ANCHOR/DARLING | P303H | A       | PC289685 | H     | P303HAF  |
|              | REMARKS:REG. GUIDE 1.97        |                |       |         |          |       |          |
| 2RHS*AOV16C  | VCH090-E-1M                    | ANCHOR/DARLING | P303H | A       | PC306711 | H     | P303HAG  |
|              | REMARKS:REG. GUIDE 1.97        |                |       |         |          |       |          |
| 2RHS*AOV39A  | RHR A SHT DN COOLING CHK VALVE | ANCHOR/DARLING | P303H | A       | PC250620 | H     | P303HAH  |
|              | REMARKS:REG. GUIDE 1.97        |                |       |         |          |       |          |
| 2RHS*AOV39B  | RHR B SHT DN COOLING CHK VALVE | ANCHOR/DARLING | P303H | A       | PC250628 | H     | P303HAI  |
|              | REMARKS:REG. GUIDE 1.97        |                |       |         |          |       |          |
| 2RHS*FT60A   | RHS HX DISCHARGE FLOW          | ROSEMOUNT      | C071H | A       | SC175105 | H     | C071HAV  |
|              | REMARKS:                       |                |       |         |          |       |          |
| 2RHS*FT60B   | RHS HX DISCHARGE FLOW          | ROSEMOUNT      | C071H | A       | SC175102 | H     | C071HAH  |
|              | REMARKS:                       |                |       |         |          |       |          |
| 2RHS*FT63A   | RHSA CONTAINMENT SPRAY FLOW    | ROSEMOUNT      | C071H | A       | SC261145 | H     | C071HAX  |
|              | REMARKS:REG. GUIDE 1.97        |                |       |         |          |       |          |
| 2RHS*FT63B   | RHSB CONTAINMENT SPRAY FLOW    | ROSEMOUNT      | C071H | A       | SC261145 | H     | C071HAY  |
|              | REMARKS:REG. GUIDE 1.97        |                |       |         |          |       |          |
| 2RHS*FT64A   | RHS A SUPP POOL SPRAY POOL     | ROSEMOUNT      | C071H | A       | SC215122 | H     | C071HAZ  |
|              | REMARKS:REG. GUIDE 1.97        |                |       |         |          |       |          |
| 2RHS*FT64B   | RHS B SUPP POOL SPRAY POOL     | ROSEMOUNT      | C071H | A       | SC215122 | H     | C071HBA  |
|              | REMARKS:REG. GUIDE 1.97        |                |       |         |          |       |          |
| 2RHS*FV38A   | RHR LOOP A TEST RETURN         | COPESE-VULCAN  | C051H | A       | SC196114 | H     | C051HAH  |
|              | REMARKS:                       |                |       |         |          |       |          |
| 2RHS*FV38B   | RHR LOOP A TEST RETURN         | COPESE-VULCAN  | C051H | A       | SC215122 | H     | C051HAI  |
|              | REMARKS:                       |                |       |         |          |       |          |
| 2RHS*FV38C   | RHR LOOP C TEST RETURN         | COPESE-VULCAN  | C051H | A       | SC215122 | H     | C051HAJ  |
|              | REMARKS:                       |                |       |         |          |       |          |
| 2RHS*HCV131  | 2RHS*PIA,B&C SUCT FR RX        | VELAN          | P304E | A       | PC261647 | H     | P304EAG  |
|              | REMARKS:                       |                |       |         |          |       |          |



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|-------------------------|-----------------------------|---------------|-------|---------|----------|-------|----------|
| *****                   | *****                       | *****         | ***** | *****   | *****    | ***** | *****    |
| 2RHS*HCV53A             | RHS LINE A TO 2HSS-REV1     | VELAN         | P304E | A       | PC306711 | H     | P304EAB  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*HCV53B             | RHS LINE B TO 2HSS-REV1     | VELAN         | P304E | A       | PC306712 | H     | P304EAC  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*HCV53C             | RHS LINE C TO 2HSS-REV1     | VELAN         | P304E | A       | PC306712 | H     | P304EAD  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*HCV54A             | 2HSS-REV1 SHUTDOWN LINE A   | VELAN         | P304E | A       | PC261643 | H     | P304EAE  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*HCV54B             | 2HSS-REV1 SHUTDOWN LINE B   | VELAN         | P304E | A       | PC261647 | H     | P304EAF  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*LV17A              | 2RHS*E1A LEVEL CONTROL      | COPE-S-VULCAN | C051M | A       | ABN17505 | H     | C051NAK  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*LV17B              | 2RHS*E1B LEVEL CONTROL      | COPE-S-VULCAN | C051M | A       | ABS17510 | H     | C051HAL  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*MOV1A              | RHR DHP P1A SUCTION         | CLOW          | P304Y | A       | SC175103 | H     | P304YAL  |
| REMARKS:REG. GUIDE 1.97 |                             |               |       |         |          |       |          |
| 2RHS*MOV1B              | RHR DHP P1B SUCTION         | CLOW          | P304Y | A       | SC175111 | H     | P304YAH  |
| REMARKS:REG. GUIDE 1.97 |                             |               |       |         |          |       |          |
| 2RHS*MOV1C              | RHR PHP P1C SUCTION         | CLOW          | P304Y | A       | SC175111 | H     | P304YAN  |
| REMARKS:REG. GUIDE 1.97 |                             |               |       |         |          |       |          |
| 2RHS*MOV104             | RHR HEAD SPRAY ISLN         | VELAN         | P304R | A       | SC289155 | H     | P304RDB  |
| REMARKS:REG. GUIDE 1.97 |                             |               |       |         |          |       |          |
| 2RHS*MOV112             | RHR SHT ON CLG SUCT ISOL    | VELAN         | P304R | A       | PC250624 | H     | P304RDC  |
| REMARKS:REG. GUIDE 1.97 |                             |               |       |         |          |       |          |
| 2RHS*MOV113             | RHR SHT DN CLG SUCT ISOL    | VELAN         | P304R | A       | SC240142 | H     | P304RDD  |
| REMARKS:REG. GUIDE 1.97 |                             |               |       |         |          |       |          |
| 2RHS*MOV115             | RHR SERVICE WATER CROSS TIE | VELAN         | P304R | A       | ABS17510 | H     | P304RDE  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*MOV116             | RHR SERVICE WTR CROSS TIE   | VELAN         | P304R | A       | ABS17510 | H     | P304RDF  |
| REMARKS:                |                             |               |       |         |          |       |          |



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|-------------------------|------------------------------|-------------|-------|---------|----------|-------|----------|
| *****                   | *****                        | *****       | ***** | *****   | *****    | ***** | *****    |
| 2RHS*MOV12A             | RHR-H.E. A SHELL-SIDE OUTLET | POSI-SEAL   | P304D | A       | ABN17505 | H     | P304DBD  |
| REMARKS:                |                              |             |       |         |          |       |          |
| 2RHS*MOV12B             | RHR H.E. B SHELL-SIDE OUTLET | POSI-SEAL   | P304D | A       | ABS17510 | H     | P304DBE  |
| REMARKS:                |                              |             |       |         |          |       |          |
| 2RHS*MOV142             | RHR DISCHARGE TO RADWASTE    | VELAN       | P304R | A       | ABS17509 | H     | P304RDG  |
| REMARKS:                |                              |             |       |         |          |       |          |
| 2RHS*MOV149             | RHR DISCHARGE TO RADWASTE    | VELAN       | P304R | A       | ABS17509 | H     | P304RDH  |
| REMARKS:                |                              |             |       |         |          |       |          |
| 2RHS*MOV15A             | RHR A REAC CNTNMT SPRAY      | VELAN       | P304R | A       | SC289155 | H     | P304RBZ  |
| REMARKS:REG. GUIDE 1.97 |                              |             |       |         |          |       |          |
| 2RHS*MOV15B             | RHR B REAC CNTNMT SPRAY      | VELAN       | P304R | A       | SC289155 | H     | P304RCA  |
| REMARKS:REG. GUIDE 1.97 |                              |             |       |         |          |       |          |
| 2RHS*MOV2A              | RHR A SHT DN COOLING SUCT    | CLOW        | P304Y | A       | ABN17504 | H     | P304YAO  |
| REMARKS:                |                              |             |       |         |          |       |          |
| 2RHS*MOV2B              | RHR B SHT DN COOLING SUCT    | CLOW        | P304Y | A       | SC175111 | H     | P304YAP  |
| REMARKS:                |                              |             |       |         |          |       |          |
| 2RHS*MOV22A             | RHR A STH LINE ISOL          | VELAN       | P304R | A       | SC215125 | H     | P304RCB  |
| REMARKS:                |                              |             |       |         |          |       |          |
| 2RHS*MOV22B             | RHR B STH LINE ISOL          | VELAN       | P304R | A       | SC215129 | H     | P304RCD  |
| REMARKS:                |                              |             |       |         |          |       |          |
| 2RHS*MOV23A             | RHR A STH LINE ISOL          | VELAN       | P304R | A       | SC175103 | H     | P304RCE  |
| REMARKS:                |                              |             |       |         |          |       |          |
| 2RHS*MOV23B             | RHR B STH LINE ISOL          | VELAN       | P304R | A       | SC175111 | H     | P304RCF  |
| REMARKS:                |                              |             |       |         |          |       |          |
| 2RHS*MOV24A             | LPCI INLET A                 | VELAN       | P304R | A       | SC289155 | H     | P304RCG  |
| REMARKS:REG. GUIDE 1.97 |                              |             |       |         |          |       |          |
| 2RHS*MOV24B             | LPCI INLET B                 | VELAN       | P304R | A       | SC289155 | H     | P304RCH  |
| REMARKS:REG. GUIDE 1.97 |                              |             |       |         |          |       |          |
| 2RHS*MOV24C             | LPCI INLET C                 | VELAN       | P304R | A       | SC289155 | H     | P304RCI  |
| REMARKS:                |                              |             |       |         |          |       |          |





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|--------------|---------------------------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                                                   | *****       | ***** | *****   | *****    | ***** | *****    |
| 2RHS*MOV25A  | RHR A REAC CNTNMT SPRAY<br>REMARKS:REG. GUIDE 1.97      | VELAN       | P304R | A       | SC289155 | H     | P304RCJ  |
| 2RHS*MOV25B  | RHR B REAC CNTNMT SPRAY<br>REMARKS:REG. GUIDE 1.97      | VELAN       | P304R | A       | SC289155 | H     | P304RCK  |
| 2RHS*MOV26A  | RHR H.E. A VENT TO SUPP POOL<br>REMARKS:REG. GUIDE 1.97 | VELAN       | P304R | A       | ABN19615 | H     | P304RCL  |
| 2RHS*MOV26B  | RHR H.E. B VENT TO SUPP POOL<br>REMARKS:REG. GUIDE 1.97 | VELAN       | P304R | A       | ABS19620 | H     | P304RCH  |
| 2RHS*MOV27A  | RHR H.E. A VENT TO SUPP POOL<br>REMARKS:REG. GUIDE 1.97 | VELAN       | P304R | A       | ABN19615 | H     | P304RCN  |
| 2RHS*MOV27B  | RHR H.E. B VENT TO SUPP POOL<br>REMARKS:REG. GUIDE 1.97 | VELAN       | P304R | A       | ABS19620 | H     | P304RCO  |
| 2RHS*MOV30A  | RHR A RTN TO SUPP POOL ISOL<br>REMARKS:REG. GUIDE 1.97  | CLOW        | P304Y | A       | SC196113 | H     | P304YAH  |
| 2RHS*MOV30B  | RHR B RTN TO SUPP POOL ISOL<br>REMARKS:REG. GUIDE 1.97  | CLOW        | P304Y | A       | SC196113 | H     | P304YAX  |
| 2RHS*MOV32A  | RHR H.E. A FLOW TO RCIC<br>REMARKS:                     | VELAN       | P304R | A       | ABN17505 | H     | P304RCP  |
| 2RHS*MOV32B  | RHR H.E. B FLOW TO RCIC<br>REMARKS:                     | VELAN       | P304R | A       | ABS17510 | H     | P304RCQ  |
| 2RHS*MOV33A  | RHR A SUPP POOL SPRAY<br>REMARKS:REG. GUIDE 1.97        | VELAN       | P304R | A       | SC215122 | H     | P304RCR  |
| 2RHS*MOV33B  | RHR B SUPP POOL SPRAY<br>REMARKS:REG. GUIDE 1.97        | VELAN       | P304R | A       | SC215122 | H     | P304RCS  |
| 2RHS*MOV37A  | RHR H.E. A FLOW TO SUPP POOL<br>REMARKS:                | VELAN       | P304R | A       | ABN17505 | H     | P304RCT  |
| 2RHS*MOV37B  | RHR H.E. B FLOW TO SUPP POOL<br>REMARKS:                | VELAN       | P304R | A       | ABS17510 | H     | P304RCU  |
| 2RHS*MOV4A   | RHR A MIN FLOW BYPASS<br>REMARKS:                       | VELAN       | P304R | A       | SC196114 | H     | P304RBH  |



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|-------------------------|-----------------------------|---------------|-------|---------|----------|-------|----------|
| *****                   | *****                       | *****         | ***** | *****   | *****    | ***** | *****    |
| 2RHS*MOV4B              | RHR B MIN FLOW BYPASS       | VELAN         | P304R | A       | ABS17509 | H     | P304RBX  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*MOV4C              | RHR C MIN FLOW BYPASS       | VELAN         | P304R | A       | ABS17508 | H     | P304RBY  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*MOV40A             | RHR A SHT DN CLG RETURN     | VELAN         | P304R | A       | SC240140 | H     | P304RCV  |
| REMARKS:REG. GUIDE 1.97 |                             |               |       |         |          |       |          |
| 2RHS*MOV40B             | RHR B SHT DN CLG RETURN     | VELAN         | P304R | A       | SC240143 | H     | P304RCH  |
| REMARKS:REG. GUIDE 1.97 |                             |               |       |         |          |       |          |
| 2RHS*MOV67A             | RHR A SHT DNCLG CV BYPASS   | VELAN         | P304R | A       | PC250620 | H     | P304RCX  |
| REMARKS:REG. GUIDE 1.97 |                             |               |       |         |          |       |          |
| 2RHS*MOV67B             | RHR B SHT DN CLG CV BYPASS  | VELAN         | P304R | A       | PC250628 | H     | P304RCY  |
| REMARKS:REG. GUIDE 1.97 |                             |               |       |         |          |       |          |
| 2RHS*MOV8A              | RHR H.E. E1A BYPASS         | CLOW          | P304Y | A       | ABN17505 | H     | P304YAQ  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*MOV8B              | RHR H.E. E1B BYPASS         | CLOW          | P304Y | A       | ABS17509 | H     | P304YAR  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*MOV80A             | GLOBE VALVE                 | VELAN         | P304R | A       | SC215125 | H     | P304RCZ  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*MOV80B             | GLOBE VALVE                 | VELAN         | P304R | A       | SC215129 | H     | P304RDA  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*MOV9A              | RHR-H.E. A SHELL-SIDE INLET | POSI-SEAL     | P304D | A       | ABN19615 | H     | P304DBB  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*MOV9B              | RHR-H.E. B SHELL-SIDE INLET | POSI-SEAL     | P304D | A       | ABS19620 | H     | P304DBC  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*M2                 | RHR SYS PRESSURE MOTOR      | GOULDS PUMPS  | P222X | A       | ABS17508 | H     | P222XAE  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*PV21A              | 2RHS*E1A HSS SUPPLY PRESS   | COPE-S-VULCAN | C051H | A       | SC175103 | H     | C051HAN  |
| REMARKS:                |                             |               |       |         |          |       |          |
| 2RHS*PV21B              | 2RHS*E1B HSS SUPPLY PRESS   | COPE-S-VULCAN | C051H | A       | SC175111 | H     | C051HAN  |
| REMARKS:                |                             |               |       |         |          |       |          |



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| *****        | *****                          | *****       | ***** | *****   | *****    | ***** | *****    |
| 2RHS*SOV120  | SAMPLING SYSTEM TEST RETURN    | TARGET ROCK | P304X | A       | SC196113 | H     | P304XEH  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV121  | SOLENOID OPERATED GLOBE VALVE  | TARGET ROCK | P304X | A       | SC196113 | H     | P304XEN  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV126  | 2RHS*E4B SHP CROSS-TIE DRN     | TARGET ROCK | P304X | A       | ABS17510 | H     | P304XEO  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV35A  | RHR A REAC SAMPLING SYS ISOL V | TARGET ROCK | P304X | A       | ABN17505 | H     | P304XEA  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV35B  | RHR B REAC SAMPLING SYS ISOL V | TARGET ROCK | P304X | A       | ABS17510 | H     | P304XEB  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV36A  | RHR A REAC SAMPLING SYS ISOL V | TARGET ROCK | P304X | A       | ABN17505 | H     | P304XEC  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV36B  | RHR B REAC SAMPLING SYS ISOL V | TARGET ROCK | P304X | A       | ABS17510 | H     | P304XED  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV70A  | STEAM LINE DRAIN               | TARGET ROCK | P304X | A       | SC175103 | H     | P304XEE  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV70B  | STEAM LINE DRAIN               | TARGET ROCK | P304X | A       | SC175111 | H     | P304XEF  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV71A  | STEAM LINE DRAIN               | TARGET ROCK | P304X | A       | SC175103 | H     | P304XEG  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV71B  | STEAM LINE DRAIN               | TARGET ROCK | P304X | A       | SC175111 | H     | P304XEH  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV72A  | SOLENOID VALVE                 | TARGET ROCK | P304X | A       | SC175103 | H     | P304XEI  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV72B  | SOLENOID VALVE                 | TARGET ROCK | P304X | A       | SC175111 | H     | P304XEJ  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV73A  | SOLENOID VALVE                 | TARGET ROCK | P304X | A       | SC175103 | H     | P304XEK  |
| REMARKS:     |                                |             |       |         |          |       |          |
| 2RHS*SOV73B  | SOLENOID VALVE                 | TARGET ROCK | P304X | A       | SC175111 | H     | P304XEL  |
| REMARKS:     |                                |             |       |         |          |       |          |



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REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION              | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|--------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                    | *****       | ***** | *****   | *****    | ***** | *****    |
| 2RHS*TIS41A  | GEN AREA EQUIPTMENT TEMP | HCC POWERS  | C071A | A       | SC261145 | H     | C071ABX  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2RHS*TIS41B  | GEN AREA EQUIPTMENT TEMP | HCC POWERS  | C071A | A       | SC261145 | H     | C071ABY  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2RHS*TIS43A  | GEN AREA EQUIPTMENT TEMP | HCC POWERS  | C071A | A       | SC240135 | H     | C071ABZ  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2RHS*TIS43B  | GEN AREA EQUIPTMENT TEMP | HCC POWERS  | C071A | A       | SC240135 | H     | C071ACA  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2RHS*TIS44A  | GEN AREA EQUIPTMENT TEMP | HCC POWERS  | C071A | A       | SC215122 | H     | C071ACF  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2RHS*TIS44B  | GEN AREA EQUIPTMENT TEMP | HCC POWERS  | C071A | A       | SC215122 | H     | C071ACG  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2RHS*TIS45A  | GEN AREA EQUIPTMENT TEMP | HCC POWERS  | C071A | A       | SC175102 | H     | C071ACB  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2RHS*TIS45B  | GEN AREA EQUIPTMENT TEMP | HCC POWERS  | C071A | A       | SC196116 | H     | C071ACC  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2RHS*TIS46A  | GEN AREA EQUIPTMENT TEMP | HCC POWERS  | C071A | A       | SC289155 | H     | C071ACD  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2RHS*TIS46B  | GEN AREA EQUIPTMENT TEMP | HCC POWERS  | C071A | A       | SC289155 | H     | C071ACE  |
| REMARKS:     |                          |             |       |         |          |       |          |





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PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
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REPORT DATE 03/25/86  
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| EQUIPMENT ID | DESCRIPTION                                                       | VENDOR NAME          | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------------------------------------------------|----------------------|-------|---------|----------|-------|----------|
| *****        |                                                                   |                      |       |         |          |       |          |
| 2RHS*RE1A    | REAC BLDG DH HATCH RADN<br>REMARKS:REG. GUIDE 1.97                | KAHAN                | P201F | A       | PC261644 | H     | P201FAO  |
| 2RHS*RE1B    | REAC BLDG DH HATCH RADN<br>REMARKS:REG. GUIDE 1.97                | KAHAN                | P201F | A       | PC261649 | H     | P201FAP  |
| 2RHS*RE1C    | REAC BLDG DH H RNG RADN<br>REMARKS:REG. GUIDE 1.97                | KAHAN                | P201F | A       | PC261638 | H     | P201FAQ  |
| 2RHS*RE1D    | REAC BLDG DH H RNG RADN<br>REMARKS:REG. GUIDE 1.97                | KAHAN                | P201F | A       | PC261638 | H     | P201FAR  |
| 2RHS-TS100   | RX/RADN BLDG V EFFLUENT RADN<br>REMARKS:REMARK -- REG. GUIDE 1.97 | SCIENCE APPLICATIONS | U213A | A       | YD261790 | H     | U213AAB  |



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| EQUIPMENT ID | DESCRIPTION                 | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-----------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                       | *****       | ***** | *****   | *****    | ***** | *****    |
| 2RSS*FT106   | RCIC PMP DISCH FLOW         | ROSEHOUNT   | C071H | A       | SC175105 | H     | C071HBD  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2RSS*LT101   | REACTOR VESSEL LEVEL        | ROSEHOUNT   | C071H | A       | SC261145 | H     | C071HBE  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2RSS*LT105   | SUPPR POOL WTR TEMP         | ROSEHOUNT   | C071H | A       | SC175105 | H     | C071HBF  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2RSS*LT112   | REAC VESSEL LVL(WIDE RANGE) | ROSEHOUNT   | C071H | A       | SC261145 | H     | C071HBY  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2RSS*LT114   | SUPPR POOL WTR TEMP         | ROSEHOUNT   | C071H | A       | SC175102 | H     | C071HBZ  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2RSS*LT115   | REACTOR VESSEL LEVEL        | ROSEHOUNT   | C071H | A       | SC261145 | H     | C071HBG  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2RSS*LT116   | REACTOR VESSEL LEVEL        | ROSEHOUNT   | C071H | A       | SC261145 | H     | C071HCA  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2RSS*PT102   | REACTOR VESSEL LEVEL        | ROSEHOUNT   | C071H | A       | SC261145 | H     | C071HSH  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2RSS*PT113   | REAC VESSEL PRESS           | ROSEHOUNT   | C071H | A       | SC261145 | H     | C071HCB  |
| REMARKS:     |                             |             |       |         |          |       |          |



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| EQUIPMENT ID | DESCRIPTION                                         | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-----------------------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                                                     |             |       |         |          |       |          |
| 2SAS*HCV160  | SERVICE AIR CNTHT ISOL V<br>REMARKS:REG. GUIDE 1.97 | VELAN       | P304H | A       | SC240135 | H     | P304HAE  |
| 2SAS*HCV161  | SERVICE AIR CNTHT ISOL V<br>REMARKS:REG. GUIDE 1.97 | VELAN       | P304H | A       | SC289155 | H     | P304HAF  |
| 2SAS*HCV162  | SERVICE AIR CNTHT ISOL V<br>REMARKS:REG. GUIDE 1.97 | VELAN       | P304H | A       | PC240603 | H     | P304HAG  |
| 2SAS*HCV163  | SERVICE AIR CNTHT ISOL V<br>REMARKS:REG. GUIDE 1.97 | VELAN       | P304H | A       | PC289681 | H     | F304HAH  |



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| EQUIPMENT ID | DESCRIPTION             | VENDOR NAME       | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------|-------------------|-------|---------|----------|-------|----------|
| *****        |                         |                   |       |         |          |       |          |
| 2SCV*PNL101A | HISC 120/240V PNL       | BROWN BOVERI ELEC | E014T | A       | ABN24033 | H     | E014TAI  |
| REMARKS:     |                         |                   |       |         |          |       |          |
| 2SCV*PNL301B | HISC 120/240 PNL        | BROWN BOVERI ELEC | E014T | A       | ABS24036 | H     | E014TAJ  |
| REMARKS:     |                         |                   |       |         |          |       |          |
| 2SCV*XD101A  | DIST XFMR 600V-120/240V | SQUARE D CO       | E011T | A       | ABN24033 | H     | E011TAB  |
| REMARKS:     |                         |                   |       |         |          |       |          |
| 2SCV*XD301B  | DIST XFMR 600V-120/240V | SQUARE D CO       | E011T | A       | ABS24036 | H     | E011TAA  |
| REMARKS:     |                         |                   |       |         |          |       |          |





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|--------------|--------------------------|-------------|-------|---------|----------|-------|----------|
| 2SFC*AOV153  | FILTER HDR INL ISOL VCH  | POSI-SEAL   | P304D | A       | SC289162 | H     | P304DAN  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*AOV154  | FILTER HDR INL ISOL VCH  | POSI-SEAL   | P304D | A       | SC289162 | H     | P304DAO  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*AOV19A  | 2SFC-FLT1A OUTLET        | POSI-SEAL   | P304D | A       | SC328193 | H     | P304DAJ  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*AOV19B  | 2SFC-FLT1B OUTLET        | POSI-SEAL   | P304D | A       | SC306176 | H     | P304DAK  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*AOV33A  | SKIMMER SURGE TANK LEVEL | POSI-SEAL   | P304D | A       | SC328199 | H     | P304DAL  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*AOV33B  | SKIMMER SURGE TANK LEVEL | POSI-SEAL   | P304D | A       | SC328199 | H     | P304DAH  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*FT36A   | SF POOL CLG SYS FLOW L   | ROSEHOUNT   | C071H | A       | SC215122 | H     | C071HSH  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*FT36B   | SF POOL CLG SYS FLOW L   | ROSEHOUNT   | C071H | A       | SC215122 | H     | C071HBN  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*FT58A   | SFC PHP DISCH FLOW       | ROSEHOUNT   | C071H | A       | SC289162 | H     | C071HBO  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*FT58B   | SFC PHP DISCH FLOW       | ROSEHOUNT   | C071H | A       | SC289161 | H     | C071HBP  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*HV17A   | 2SFC-F1A BYPASS          | POSI-SEAL   | P304D | A       | SC289162 | H     | P304DAR  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*HV17B   | 2SFC-F1B BYPASS          | POSI-SEAL   | P304D | A       | SC289161 | H     | P304DAS  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*HV18A   | 2SFC-F1A INLET           | POSI-SEAL   | P304D | A       | SC289162 | H     | P304DAT  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*HV18B   | 2SFC-F1B INLET           | POSI-SEAL   | P304D | A       | SC289162 | H     | P304DAU  |
| REMARKS:     |                          |             |       |         |          |       |          |
| 2SFC*HV35A   | 2SFC-TK1A INLET V        | POSI-SEAL   | P304D | A       | SC328197 | H     | P304DAV  |
| REMARKS:     |                          |             |       |         |          |       |          |



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PROJECT EQUIPMENT SYSTEM  
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| EQUIPMENT ID | DESCRIPTION                 | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-----------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                       | *****       | ***** | *****   | *****    | ***** | *****    |
| 2SFC*HV35B   | 2SFC-TK1B INLET V           | POSI-SEAL   | P304D | A       | SC328221 | H     | P304DAN  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*HV37A   | 2SFC-HT EXCHGR DISCH V      | POSI-SEAL   | P304D | A       | SC215122 | H     | P304DAX  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*HV37B   | 2SFC-HT EXCHGR DISCH V      | POSI-SEAL   | P304D | A       | SC215122 | H     | P0304DAY |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*HV54A   | SKIMMER SURGE TANK OUTLET   | POSI-SEAL   | P304D | A       | SC328193 | H     | P0304DAZ |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*HV54B   | SKIMMER SURGE TANK OUTLET   | POSI-SEAL   | P304D | A       | SC328221 | H     | P304DBA  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*HV6A    | SF POOL CLG HTR XCONN       | POSI-SEAL   | P304D | A       | SC289162 | H     | P304DAP  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*HV6B    | SF POOL CLG HTR XCONN       | POSI-SEAL   | P304D | A       | SC289161 | H     | P304DAQ  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*LS33A   | SKIMMER SURGE TANK LEVEL    | MAGNETROL   | C021L | A       | SC328193 | H     | C021LAI  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*LS33B   | SKIMMER SURGE TANK LEVEL    | MAGNETROL   | C021L | A       | SC328187 | H     | C021LAJ  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*LS33C   | SKIMMER SURGE TANK LEVEL    | MAGNETROL   | C021L | A       | SC328193 | H     | C021LAK  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*LS33D   | SKIMMER SURGE TANK LEVEL    | MAGNETROL   | C021L | A       | SC328187 | H     | C021LAL  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*LS34A   | SFC SKIMMER SURGE TK HI LVL | MAGNETROL   | C021L | A       | SC328193 | H     | C021LAN  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*LS34B   | SFC SKIMMER SURGE TK HI LVL | MAGNETROL   | C021L | A       | SC328187 | H     | C021LAN  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*LS55A   | SF POOL HTR LVL LOH         | MAGNETROL   | C021L | A       | SC353202 | H     | C021LAO  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SFC*LS55B   | SF POOL HTR LVL LOH         | MAGNETROL   | C021L | A       | SC353202 | H     | C021LAP  |
| REMARKS:     |                             |             |       |         |          |       |          |



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PROJECT EQUIPMENT SYSTEM  
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|--------------|------------------------------|--------------|-------|---------|----------|-------|----------|
| *****        | *****                        | *****        | ***** | *****   | *****    | ***** | *****    |
| 2SFC*LT32A   | SF POOL SURGE TANK WATER LVL | ROSEHOUNT    | C071H | A       | SC328197 | H     | C071H8Q  |
| REMARKS:     |                              |              |       |         |          |       |          |
| 2SFC*LT32B   | SF POOL SURGE TANK WATER LVL | ROSEHOUNT    | C071H | A       | SC328187 | H     | C071H8R  |
| REMARKS:     |                              |              |       |         |          |       |          |
| 2SFC*N1A     | FUEL POOL CHC MOTOR          | GOULDS PUMPS | P222X | A       | SC289162 | H     | P222XAA  |
| REMARKS:     |                              |              |       |         |          |       |          |
| 2SFC*N1B     | FUEL POOL CHC MOTOR          | GOULDS PUMPS | P222X | A       | SC289161 | H     | P222XAB  |
| REMARKS:     |                              |              |       |         |          |       |          |
| 2SFC*PT3A    | SF POOL CIRC PP A SUCT PRESS | ROSEHOUNT    | C071H | A       | SC261145 | H     | C071H8S  |
| REMARKS:     |                              |              |       |         |          |       |          |
| 2SFC*PT3B    | SF POOL CIRC PP B SUCT PRESS | ROSEHOUNT    | C071H | A       | SC261145 | H     | C071H8T  |
| REMARKS:     |                              |              |       |         |          |       |          |
| 2SFC*PT30A   | SF POOL CIRC PHP DISCH PRESS | ROSEHOUNT    | C071H | A       | SC261145 | H     | C071H8U  |
| REMARKS:     |                              |              |       |         |          |       |          |
| 2SFC*PT30B   | SF POOL CIRC PHP DISCH PRESS | ROSEHOUNT    | C071H | A       | SC261145 | H     | C071H8V  |
| REMARKS:     |                              |              |       |         |          |       |          |
| 2SFC*TE31A   | SF POOL SURGE TANK TEMP OUTL | PYCO         | C041D | A       | SC328193 | H     | C041DCQ  |
| REMARKS:     |                              |              |       |         |          |       |          |
| 2SFC*TE31B   | SF POOL SURGE TANK TEMP OUTL | PYCO         | C041D | A       | SC328221 | H     | C041DCR  |
| REMARKS:     |                              |              |       |         |          |       |          |
| 2SFC*TE8A    | SF POOL HT EXCH OUT TEMP     | PYCO         | C041D | A       | SC215122 | H     | C041DCO  |
| REMARKS:     |                              |              |       |         |          |       |          |
| 2SFC*TE8B    | SF POOL HT EXCH OUT TEMP     | PYCO         | C041D | A       | SC215122 | H     | C041DCP  |
| REMARKS:     |                              |              |       |         |          |       |          |



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|-------------------------|------------------------|-------------|-------|---------|----------|-------|----------|
| *****                   |                        |             |       |         |          |       |          |
| 2SLS*HCV111             | STBY LIQ TEST TK VALVE | VELAN       | P304L | A       | SC289155 | H     | P304LAA  |
| REMARKS:                |                        |             |       |         |          |       |          |
| 2SLS*HCV114             | GLOBE VALVE            | VELAN       | P304J | A       | PC306711 | H     | P304JAA  |
| REMARKS:                |                        |             |       |         |          |       |          |
| 2SLS*MOV1A              | SEALED GLOBE VALVE     | VELAN       | P304S | A       | SC289155 | H     | P304SAH  |
| REMARKS:                |                        |             |       |         |          |       |          |
| 2SLS*MOV1B              | SEALED GLOBE VALVE     | VELAN       | P304S | A       | SC289155 | H     | P304SAX  |
| REMARKS:                |                        |             |       |         |          |       |          |
| 2SLS*MOV5A              | STOP CHECK             | VELAN       | P304S | A       | SC289155 | H     | P304SAY  |
| REMARKS:REG. GUIDE 1.97 |                        |             |       |         |          |       |          |
| 2SLS*MOV5B              | STOP CHECK             | VELAN       | P304S | A       | SC289155 | H     | P304SAZ  |
| REMARKS:REG. GUIDE 1.97 |                        |             |       |         |          |       |          |





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|--------------|----------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        |                                        |             |       |         |          |       |          |
| 2SVV*NBE220  | 2HSS*PSV120<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289682 | H     | C071HAA  |
| 2SVV*NBE221  | 2HSS*PSV121<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289679 | H     | C071HAB  |
| 2SVV*NBE222  | 2HSS*PSV122<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289680 | H     | C071HAC  |
| 2SVV*NBE223  | 2HSS*PSV123<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289680 | H     | C071HAD  |
| 2SVV*NBE224  | 2HSS*PSV124<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289680 | H     | C071HAE  |
| 2SVV*NBE225  | 2HSS*PSV125<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289680 | H     | C071HAF  |
| 2SVV*NBE226  | 2HSS*PSV126<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289680 | H     | C071HAG  |
| 2SVV*NBE227  | 2HSS*PSV127<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289680 | H     | C071HAH  |
| 2SVV*NBE228  | 2HSS*PSV128<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289680 | H     | C071HAI  |
| 2SVV*NBE229  | 2HSS*PSV129<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289680 | H     | C071HAJ  |
| 2SVV*NBE230  | 2HSS*PSV130<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289680 | H     | C071HAK  |
| 2SVV*NBE231  | 2HSS*PSV131<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289680 | H     | C071HAL  |
| 2SVV*NBE232  | 2HSS*PSV132<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289680 | H     | C071HAI  |
| 2SVV*NBE233  | 2HSS*PSV133<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289680 | H     | C071HAN  |
| 2SVV*NBE234  | 2HSS*PSV134<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071H | A       | PC289686 | H     | C071NAO  |



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REPORT NO. NMP815

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                            | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|----------------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                                  | *****       | ***** | *****   | *****    | ***** | *****    |
| 2SVV*NBE235  | 2HSS*PSV135<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071W | A       | PC289679 | H     | C071HAP  |
| 2SVV*NBE236  | 2HSS*PSV136<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071W | A       | PC289680 | H     | C071HAQ  |
| 2SVV*NBE237  | 2HSS*PSV137<br>REMARKS:REG. GUIDE 1.97 | T.E.C.      | C071W | A       | PC289680 | H     | C071HAR  |
| 2SVV*NBY220  | 2HSS*PSV120<br>REMARKS:                | T.E.C.      | C071W | A       | SC240135 | H     | C071HBA  |
| 2SVV*NBY221  | 2HSS*PSV121<br>REMARKS:                | T.E.C.      | C071W | A       | SC240135 | H     | C071HBB  |
| 2SVV*NBY222  | 2HSS*PSV122<br>REMARKS:                | T.E.C.      | C071W | A       | SC240135 | H     | C071HBC  |
| 2SVV*NBY223  | 2HSS*PSV123<br>REMARKS:                | T.E.C.      | C071W | A       | SC240135 | H     | C071HBD  |
| 2SVV*NBY224  | 2HSS*PSV124<br>REMARKS:                | T.E.C.      | C071W | A       | SC240135 | H     | C071HBE  |
| 2SVV*NBY225  | 2HSS*PSV125<br>REMARKS:                | T.E.C.      | C071W | A       | SC240135 | H     | C071HBF  |
| 2SVV*NBY226  | 2HSS*PSV126<br>REMARKS:                | T.E.C.      | C071W | A       | SC240135 | H     | C071HBG  |
| 2SVV*NBY227  | 2HSS*PSV127<br>REMARKS:                | T.E.C.      | C071W | A       | SC240135 | H     | C071HBH  |
| 2SVV*NBY228  | 2HSS*PSV128<br>REMARKS:                | T.E.C.      | C071W | A       | SC240135 | H     | C071HBI  |
| 2SVV*NBY229  | 2HSS*PSV129<br>REMARKS:                | T.E.C.      | C071W | A       | SC240135 | H     | C071HBJ  |
| 2SVV*NBY230  | 2HSS*PSV130<br>REMARKS:                | T.E.C.      | C071W | A       | SC240135 | H     | C071HBK  |
| 2SVV*NBY231  | 2HSS*PSV131<br>REMARKS:                | T.E.C.      | C071W | A       | SC240135 | H     | C071HBL  |



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J.O.NO. 1217700  
JOB NAME NINE HILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****       | *****       | ***** | *****   | *****    | ***** | *****    |
| 2SVV*NSY232  | 2HSS*PSV132 | T.E.C.      | C071H | A       | SC240135 | H     | C071KSI  |
| REMARKS:     |             |             |       |         |          |       |          |
| 2SVV*NSY233  | 2HSS*PSV133 | T.E.C.      | C071H | A       | SC240135 | H     | C071KBN  |
| REMARKS:     |             |             |       |         |          |       |          |
| 2SVV*NSY234  | 2HSS*PSV134 | T.E.C.      | C071H | A       | SC240135 | H     | C071KBO  |
| REMARKS:     |             |             |       |         |          |       |          |
| 2SVV*NSY235  | 2HSS*PSV135 | T.E.C.      | C071H | A       | SC240135 | H     | C071KBP  |
| REMARKS:     |             |             |       |         |          |       |          |
| 2SVV*NSY236  | 2HSS*PSV136 | T.E.C.      | C071H | A       | SC240135 | H     | C071KBQ  |
| REMARKS:     |             |             |       |         |          |       |          |
| 2SVV*NSY237  | 2HSS*PSV137 | T.E.C.      | C071H | A       | SC240135 | H     | C071KBR  |
| REMARKS:     |             |             |       |         |          |       |          |



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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                 | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-----------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                       | *****       | ***** | *****   | *****    | ***** | *****    |
| 2SHP*AOV20A  | SHP TO RHS*P1A SL CLR       | XONOX       | P304K | A       | ABN17504 | H     | P304KAH  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*AOV20B  | SHP TO RHS*P1A SL CLR       | XONOX       | P304K | A       | ABS17509 | H     | P304KAI  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*AOV22A  | SHP FROM RHS*P1A SL CLR     | XONOX       | P304K | A       | ABN17504 | H     | P304KAJ  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*AOV22B  | SHP FROM RHS*P1B SL CLR     | XONOX       | P304K | A       | ABS17509 | H     | P304KAK  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*AOV97A  | SHP FR CLG COIL 2HVR*UC413A | XONOX       | P304K | A       | SC289155 | H     | P304KAL  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*AOV97B  | SHP FR CLG COIL 2HVR*UC413B | XONOX       | P304K | A       | SC289155 | H     | P304KAN  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*MOV15A  | SVCE HTR TO 2HVR*UC403A     | VELAN       | P304R | A       | SC175105 | H     | P304RDI  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*MOV15B  | SVCE HTR TO 2HVR*UC403B     | VELAN       | P304R | A       | SC196116 | H     | P304RDJ  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*MOV17A  | GATE VALVE                  | VELAN       | P304R | A       | SC196113 | H     | P304RDK  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*MOV17B  | GATE VALVE                  | VELAN       | P304R | A       | SC175105 | H     | P304RDL  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*MOV18A  | GATE VALVE                  | VELAN       | P304R | A       | SC196113 | H     | P304RDH  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*MOV18B  | GATE VALVE                  | VELAN       | P304R | A       | SC196116 | H     | P304RDN  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*MOV19A  | SHP TO CCP HT EXCH ISOL V   | CLOW        | P304Y | A       | ABN21523 | H     | P304YAY  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*MOV19B  | SHP TO CCP HT EXCH ISOL V   | CLOW        | P304Y | A       | ABN21523 | H     | P304YAZ  |
| REMARKS:     |                             |             |       |         |          |       |          |
| 2SHP*MOV21A  | GATE VALVE                  | VELAN       | P304R | A       | SC289155 | H     | P304RDO  |
| REMARKS:     |                             |             |       |         |          |       |          |





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SYS -- SHP  
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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                   | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|-------------------------------|-------------|-------|---------|----------|-------|----------|
| *****        | *****                         | *****       | ***** | *****   | *****    | ***** | *****    |
| 2SHP*MOV21B  | GATE VALVE                    | VELAN       | P304R | A       | SC269155 | H     | P304RDP  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2SHP*MOV33A  | BUTTERFLY OR TRICENTRIC VALVE | CLOW        | P304Y | A       | ABN17505 | H     | P304YBA  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2SHP*MOV33B  | BUTTERFLY OR TRICENTRIC VALVE | CLOW        | P304Y | A       | ABS17510 | H     | P304YBB  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2SHP*MOV38A  | SHP TO RBCLCH SYS             | VELAN       | P304R | A       | SC261145 | H     | P304RDQ  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2SHP*MOV38B  | SHP TO RBCLCH SYS             | VELAN       | P304R | A       | SC261145 | H     | P304RDR  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2SHP*MOV39A  | SHP TO RBCLCH SYS             | VELAN       | P304R | A       | SC261145 | H     | P304RDS  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2SHP*MOV39B  | SHP TO RBCLCH SYS             | VELAN       | P304R | A       | SC261145 | H     | P304RDT  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2SHP*MOV90A  | BUTTERFLY OR TRICENTRIC VALVE | CLOW        | P304Y | A       | ABN17505 | H     | P304YBC  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2SHP*MOV90B  | BUTTERFLY OR TRICENTRIC VALVE | CLOW        | P304Y | A       | ABS17510 | H     | P304YBD  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2SHP*PT140A  | SHP TO CCP HT EXCHS PRESS     | ROSEMOUNT   | C071H | A       | ABN19614 | H     | C071MBH  |
| REMARKS:     |                               |             |       |         |          |       |          |
| 2SHP*PT140B  | SHP TO CCP HT EXCHS PRESS     | ROSEMOUNT   | C071H | A       | ABN19614 | H     | C071MBX  |
| REMARKS:     |                               |             |       |         |          |       |          |



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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION    | VENDOR NAME       | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|--------------|----------------|-------------------|-------|---------|----------|-------|----------|
| *****        |                |                   |       |         |          |       |          |
| 2VBS*PNLA105 | MSLIV DIST PNL | BROWN BOVERI ELEC | E014T | A       | ABN24033 | H     | E014TAM  |
| REMARKS:     |                |                   |       |         |          |       |          |
| 2VBS*PNLA106 | MSLIV DIST PNL | BROWN BOVERI ELEC | E014T | A       | ABS24036 | H     | E014TAO  |
| REMARKS:     |                |                   |       |         |          |       |          |
| 2VBS*PNLB105 | MSLIV DIST PNL | BROWN BOVERI ELEC | E014T | A       | ABN24033 | H     | E014TAN  |
| REMARKS:     |                |                   |       |         |          |       |          |
| 2VBS*PNLB106 | MSLIV DIST PNL | BROWN BOVERI ELEC | E014T | A       | ABS24036 | H     | E014TAP  |
| REMARKS:     |                |                   |       |         |          |       |          |



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SYS -- KCS  
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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
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PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
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REPORT DATE 03/25/86  
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| EQUIPMENT ID            | DESCRIPTION                 | VENDOR NAME | SPEC  | EQ STAT | ZONE     | ZNIND | QUAL REF |
|-------------------------|-----------------------------|-------------|-------|---------|----------|-------|----------|
| *****                   |                             |             |       |         |          |       |          |
| 2HCS*HOV101             | RHCU REAC VESSEL DRN        | VELAN       | P304R | A       | PC261647 | H     | P304RDU  |
| REMARKS:                |                             |             |       |         |          |       |          |
| 2HCS*HOV102             | INSIDE CONT                 | VELAN       | P304R | A       | PC240606 | H     | P304RDV  |
| REMARKS:REG. GUIDE 1.97 |                             |             |       |         |          |       |          |
| 2HCS*HOV103             | RHCU CONTAIN NTR OPER VALVE | VELAN       | P304R | A       | PC240606 | H     | P304RDH  |
| REMARKS:                |                             |             |       |         |          |       |          |
| 2HCS*HOV104             | RHCU INLET FROM RECIRC B    | VELAN       | P304R | A       | PC240608 | H     | P304RDX  |
| REMARKS:                |                             |             |       |         |          |       |          |
| 2HCS*HOV105             | RHCU INL FROM RECIRC A      | VELAN       | P304R | A       | PC240606 | H     | P304RDY  |
| REMARKS:                |                             |             |       |         |          |       |          |
| 2HCS*HOV112             | OUTSIDE CONT                | VELAN       | P304R | A       | SC240142 | H     | P304RDZ  |
| REMARKS:REG. GUIDE 1.97 |                             |             |       |         |          |       |          |
| 2HCS*HOV200             | RHCU RETURN ISOL            | VELAN       | P304R | A       | HST26146 | H     | P304REA  |
| REMARKS:REG. GUIDE 1.97 |                             |             |       |         |          |       |          |



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SYS -- ZZZ  
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J.O.NO. 1217700  
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JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
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| EQUIPMENT ID | DESCRIPTION                                                                          | VENDOR NAME | SPEC  | EQ STAT | ZONE | ZNIND | QUAL REF |
|--------------|--------------------------------------------------------------------------------------|-------------|-------|---------|------|-------|----------|
| 2E*11        | INSULATED LUGS AMP NUCL "PIDG"<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS       |             | E061A | A       | ALL  | H     | E061AAK  |
| 2E*12        | INSULATED BUTT SPLICES AMP NUC<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS       |             | E061A | A       | ALL  | H     | E061AAL  |
| 2E*13        | TERMINAL BLOCKS MARATHON"1500"<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS.      |             | E061A | A       | ALL  | H     | E061AAH  |
| 2E*19        | 600V IN-LINE SPLICE"KCSF-N" RAYCHEM<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS. |             | E061A | A       | ALL  | H     | E061AAS  |
| 2E*20        | NUCL MOTOR CONN "NICK" RAYCHEM<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS       |             | E061A | A       | ALL  | H     | E061AAT  |
| 2E*21        | NUCL IN-LINE SPLICE "NPKV" RAYCHEM<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS.  |             | E061A | A       | ALL  | H     | E061AAU  |
| 2E*22        | NUCL HV TERM "NHVT-U" RAYCHEM<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS.       |             | E061A | A       | ALL  | H     | E061AAV  |
| 2E*23        | IN-LINE HTR CONN "NICK-8" RAYCHEM<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS.   |             | E061A | A       | ALL  | H     | E061AAH  |
| 2E*30        | CONDUIT SEAL ASSEMBLY,"353C"<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS         |             | E061A | A       | ALL  | H     | E061ABD  |
| 2E*31        | CONDUIT SEAL ASSEMBLY,"ECSA"<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS         |             | E061A | A       | ALL  | H     | E061ABE  |
| 2E*37        | NUCL END CAPS "NESH" RAYCHEM<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS.        |             | E0904 | A       | ALL  | H     | E0904AA  |
| 2E*38        | NUCL MOTOR CONN "NICK" RAYCHEM<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS       |             | E0904 | A       | ALL  | H     | E0904AB  |
| 2E*39        | NUCL CABLE SLVS "KCSF-N" RAYCHEM<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS.    |             | E0904 | A       | ALL  | H     | E0904AC  |
| 2E*40        | NUCL SPLICE "NPKX" RAYCHEM<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS.          |             | E0904 | A       | ALL  | H     | E0904AD  |
| 2E*42        | NUCL STUB CONN "NPKV" RAYCHEM<br>REMARKS:SEE SCEWSHEET FOR ZONE RESTRICTIONS.        |             | E0904 | A       | ALL  | H     | E0904AF  |





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SYS -- ZZZ  
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PROJECT EQUIPMENT SYSTEM  
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| EQUIPMENT ID   | DESCRIPTION                                  | VENDOR NAME   | SPEC  | EQ STAT | ZONE | ZNIND | QUAL REF |
|----------------|----------------------------------------------|---------------|-------|---------|------|-------|----------|
| *****<br>2E443 | NUCL SPLICE"NPHC"                            | RAYCHEM       | E0904 | A       | ALL  | H     | E0904AG  |
|                | REMARKS:SEE SCEWSHEET FOR ZONE RESTRICTIONS. |               |       |         |      |       |          |
| 2NAF-50        | SIS WIRE 10ANG 105 STRANDS                   | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BAT  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NAF-51        | SIS WIRE 12ANG 65 STRANDS                    | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BAS  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NAF-52        | SIS WIRE 14ANG 41 STRAND                     | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BAO  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJH-01        | STR CU CA 1 THPR WITH JKT                    | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BBF  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJH-02        | STR CU CA 3 THPR WITH JKT                    | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BBG  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJH-03        | STR CU CA 7 THPR WITH JKT                    | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BBH  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJH-04        | STR CU CA EPR IN H JKT                       | HERITE CO     | E024A | A       | ALL  | H     | E024AAA  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJH-05        | STR CU CA EPR INS H JKT                      | HERITE CO     | E024A | A       | ALL  | H     | E024AAB  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJH-06        | STR CU CA THERMO INS JKT                     | HERITE CO     | E024A | A       | ALL  | H     | E024AAC  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJH-08        | THERM INS H JKT 10ANG                        | OKONITE CO    | E023C | A       | ALL  | H     | E023CAA  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJH-10        | STR CU CA EPR INS H JKT                      | HERITE CO     | E024A | A       | ALL  | H     | E024AAD  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJH-12        | STR CU CA THRM INS JKT 8ANG                  | OKONITE CO    | E023C | A       | ALL  | H     | E023CAB  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJH-13        | STR CU CA THERMO INS JKT                     | HERITE CO     | E024A | A       | ALL  | H     | E024AAE  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJH-14        | STR CU CA THERMO INS JKT                     | HERITE CO     | E024A | A       | ALL  | H     | E024AAF  |
|                | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |



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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                  | VENDOR NAME | SPEC  | EQ STAT | ZONE  | ZNIND | QUAL REF |
|--------------|----------------------------------------------|-------------|-------|---------|-------|-------|----------|
| *****        | *****                                        | *****       | ***** | *****   | ***** | ***** | *****    |
| 2NJH-15      | STR CU CA THRM INS JKT 250KCH                | OKONITE CO  | E023C | A       | ALL   | H     | E023CAP  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-16      | STR CU CA THH INS JKT 500 KCH                | OKONITE CO  | E023C | A       | ALL   | H     | E023CAN  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-17      | STR CU THERM INS JKT 750KCH                  | OKONITE CO  | E023C | A       | ALL   | H     | E023CAH  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-18      | STR CU THERM INS JKT 2ANG                    | OKONITE CO  | E023C | A       | ALL   | H     | E023CAT  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-25      | STR CU CA QD N10 GND JKT 2ANG                | OKONITE CO  | E023C | A       | ALL   | H     | E023CAE  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-28      | STR CU CA QD 2N3 GND JKT 2/O                 | OKONITE CO  | E023C | A       | ALL   | H     | E023CAG  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-30      | STR CU CA QD 2N3 GND JKT 3/O                 | OKONITE CO  | E023C | A       | ALL   | H     | E023CAH  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-31      | STR CU CA QD 2N3 GND JKT 4/O                 | OKONITE CO  | E023C | A       | ALL   | H     | E023CAI  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-33      | STR CU CA N 1/O GND JKT 250KCH               | OKONITE CO  | E023C | A       | ALL   | H     | E023CAJ  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-34      | STR CU CA QD 2N3 GND JKT 1/O                 | OKONITE CO  | E023C | A       | ALL   | H     | E023CAF  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-36      | STR CU THERM INS HJKT 4ANG                   | OKONITE CO  | E023C | A       | ALL   | H     | E023CAU  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-37      | STR CU THERM INS OA JKT 6ANG                 | OKONITE CO  | E023C | A       | ALL   | H     | E023CAV  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-40      | STR CU CA QD N10 GND JKT 6ANG                | OKONITE CO  | E023C | A       | ALL   | H     | E023CAC  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-41      | STR CU CA QD N10 GND JKT 4ANG                | OKONITE CO  | E023C | A       | ALL   | H     | E023CAD  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |
| 2NJH-44      | STR CU THERM INS OA JKT 350KCH               | OKONITE CO  | E023C | A       | ALL   | H     | E023CAO  |
|              | REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |             |       |         |       |       |          |



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REPORT NO. NMP815

J.O.NO. 1217700

JOB NAME NINE MILE - UNIT 2

JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
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SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86

UPDATE DATE 03/24/86

RESET NO. 020

RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                  | VENDOR NAME   | SPEC  | EQ STAT | ZONE  | ZNIND | QUAL REF |
|--------------|----------------------------------------------|---------------|-------|---------|-------|-------|----------|
| *****        | *****                                        | *****         | ***** | *****   | ***** | ***** | *****    |
| 2NJH-45      | STR CU QD 350CH JKT 1/0 GND                  | OKONITE CO    | E023C | A       | ALL   | H     | E023CAK  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJH-46      | STR CU CA QD 500KCH JKT 1/0GND               | OKONITE CO    | E023C | A       | ALL   | H     | E023CAL  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJH-47      | STR CU THERM INS OA JKT 2/0                  | OKONITE CO    | E023C | A       | ALL   | H     | E023CAR  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJH-48      | STR CU THERM INS OA JKT 1/0                  | OKONITE CO    | E023C | A       | ALL   | H     | E023CAS  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJH-49      | STR CU THERM INS OA JKT 4/0                  | OKONITE CO    | E023C | A       | ALL   | H     | E023CAQ  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJH-50      | CU CA THISTED W/OVERALL SHLD                 | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BCA  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJH-51      | CU CA THISTED W/OVERALL SHLD                 | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BCB  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJH-52      | CU CA THISTED W/OVERALL SHLD                 | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BCD  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJH-53      | CU CA THISTED W/OVERALL SHLD                 | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BCE  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJN-07      | STR CU CA EPR INS H JKT                      | HERITE CO     | E024A | A       | ALL   | H     | E024AAG  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJN-08      | STR CU CA EPR INS H JKT                      | HERITE CO     | E024A | A       | ALL   | H     | E024AAH  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJN-09      | STR CU CA EPR INS H JKT                      | HERITE CO     | E024A | A       | ALL   | H     | E024AAI  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJN-10      | STR CU CA EPR INS H JKT                      | HERITE CO     | E024A | A       | ALL   | H     | E024AAJ  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJN-11      | STR CU TRX NO 4 GND JKT                      | HERITE CO     | E023B | A       | ALL   | H     | E023BAA  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJN-12      | STR CU TRX NO 2 GND JKT                      | HERITE CO     | E023B | A       | ALL   | H     | E023BAB  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |



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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                                                  | VENDOR NAME   | SPEC  | EQ STAT | ZONE  | ZNIND | QUAL REF |
|--------------|------------------------------------------------------------------------------|---------------|-------|---------|-------|-------|----------|
| *****        | *****                                                                        | *****         | ***** | *****   | ***** | ***** | *****    |
| 2NJN-13      | STR CU TRX NO 2 GND JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS      | KERITE CO     | E023B | A       | ALL   | H     | E023BAC  |
| 2NJN-14      | STR CU TRX NO 2 GND JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS      | KERITE CO     | E023B | A       | ALL   | H     | E023BAD  |
| 2NJN-15      | STR CU TRX NO 2 GND JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS      | KERITE CO     | E023B | A       | ALL   | H     | E023BAE  |
| 2NJN-17      | STR CU CA THERMO INS OA JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS  | KERITE CO     | E023B | A       | ALL   | H     | E023BAF  |
| 2NJN-18      | STR C CA EPR INS H JKT SHLD<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS  | KERITE CO     | E024A | A       | ALL   | H     | E024AAK  |
| 2NJN-19      | STR C CA EPR INS H JKT SHLD<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS  | KERITE CO     | E024A | A       | ALL   | H     | E024AAL  |
| 2NJN-20      | STR CU CA EPR INS H JKT SHLD<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | KERITE CO     | E024A | A       | ALL   | H     | E024AAH  |
| 2NJN-21      | STR CU CA EPR INS H JKT SHLD<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | KERITE CO     | E024A | A       | ALL   | H     | E024AAN  |
| 2NJN-22      | STR CU CA EPR INS H JKT SHLD<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | KERITE CO     | E024A | A       | ALL   | H     | E024AAO  |
| 2NJN-23      | STR CU CA EPR INS H JKT SHLD<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | KERITE CO     | E024A | A       | ALL   | H     | E024AAP  |
| 2NJN-31      | STR CU CA EPR INS H JKT SHLD<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | KERITE CO     | E024A | A       | ALL   | H     | E024AAQ  |
| 2NJN-32      | STR CU CA EPR INS H JKT SHLD<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | KERITE CO     | E024A | A       | ALL   | H     | E024AAR  |
| 2NJN-34      | STR CU CA XPLE INS H JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BBA  |
| 2NJN-35      | STR CU CA XPLE INS H JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BBN  |
| 2NJN-36      | STR CU CA XPLE INS H JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BBB  |





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J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
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SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
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| EQUIPMENT ID | DESCRIPTION                                                                    | VENDOR NAME   | SPEC  | EQ STAT | ZONE  | ZNIND | QUAL REF |
|--------------|--------------------------------------------------------------------------------|---------------|-------|---------|-------|-------|----------|
| *****        | *****                                                                          | *****         | ***** | *****   | ***** | ***** | *****    |
| 2NJN-37      | STR CU CA XPLE INS H JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS       | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BBC  |
| 2NJN-38      | STR CU CA XPLE INS H JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS       | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BBD  |
| 2NJN-39      | STR CU CA XPLE INS H JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS       | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BBE  |
| 2NJN-59      | STR CU CA NON SHLD<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS             | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BAA  |
| 2NJP-01      | 8/C #18 + RG-58 + RG-59 DRHS<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS   | BRAND-REX     | E0906 | A       | ALL   | H     | E0906BB  |
| 2NJP-02      | 24/C #20 ANG CU CA DRHS<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS        | BRAND-REX     | E0906 | A       | ALL   | H     | E0906AA  |
| 2NJP-03      | STU CU CA 1 THTRIP H JKT SHLD<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS  | OKONITE CO    | E024P | A       | ALL   | H     | E024PAE  |
| 2NJP-04      | STR CU CA 1 TH QUAD JKT SHLD<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS   | OKONITE CO    | E024P | A       | ALL   | H     | E024PAH  |
| 2NJP-05      | STR CU CA 1 THPR H JKT SHLD<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS    | OKONITE CO    | E024P | A       | ALL   | H     | E024PAA  |
| 2NJP-06      | STR CU CA 2 THPR SHLD H JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS    | OKONITE CO    | E024P | A       | ALL   | H     | E024PAB  |
| 2NJP-07      | 14/C #20 ANG CU CA DRHS<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS        | BRAND-REX     | E0906 | A       | ALL   | H     | E0906AB  |
| 2NJP-08      | STR CU CA 5 THPR SHLD H JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS    | OKONITE CO    | E024P | A       | ALL   | H     | E024PAC  |
| 2NJP-09      | STR CU CA 7 THPR SHLD H JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS    | OKONITE CO    | E024P | A       | ALL   | H     | E024PAD  |
| 2NJP-13      | COAXIAL/TRIAXIAL CABLE<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS         | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BXA  |
| 2NJP-14      | STR CU CA 2 TH TRIP SHLD H JKT<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | OKONITE CO    | E024P | A       | ALL   | H     | E024PAF  |



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SYS -- ZZZ  
REPORT NO. NMP015

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
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SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
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RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                  | VENDOR NAME   | SPEC  | EQ STAT | ZONE | ZNIND | QUAL REF |
|--------------|----------------------------------------------|---------------|-------|---------|------|-------|----------|
| 2NJP-15      | STR CU CA 5 TH TRIP SHLD H JKT OKONITE CO    |               | E024P | A       | ALL  | H     | E024PAG  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-16      | IRON/CONST 2 THPR H JKT SHLD                 | ROCKBESTOS CO | E024R | A       | ALL  | H     | E024RAE  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-20      | STR CU-CONST 1 THPR H JKT SHLD               | ROCKBESTOS CO | E024R | A       | ALL  | H     | E024RAA  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-21      | STR CU-CONST 2 THPR H JKT SHLD               | ROCKBESTOS CO | E024R | A       | ALL  | H     | E024RAB  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-22      | 6/C #20 AWG CU CA DRHS                       | BRAND-REX     | E0906 | A       | ALL  | H     | E0906AC  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-23      | STR CU-CONST 5 THPR H JKT SHLD               | ROCKBESTOS CO | E024R | A       | ALL  | H     | E024RAC  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-24      | STR CU-CONST 7 THPR H JKT SHLD               | ROCKBESTOS CO | E024R | A       | ALL  | H     | E024RAD  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-25      | STR CU CA (1TH PR CH/AL)                     | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BEC  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-26      | CHROMEL/AL 28 THPR N JKT SHLD                | ROCKBESTOS CO | E024R | A       | ALL  | H     | E024RAF  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-27      | CHROMEL/AL 4 THPR N JKT SHLD                 | ROCKBESTOS CO | E024R | A       | ALL  | H     | E024RAG  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-28      | COAXIAL/TRIAXIAL CABLE                       | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BXB  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-29      | COAXIAL/TRIAXIAL CABLE                       | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BXC  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-31      | COAXIAL/TRIAXIAL CABLE                       | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BXD  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-32      | COAXIAL/TRIAXIAL CABLE                       | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BXE  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |
| 2NJP-35      | STR CU CA N JKT SHLD                         | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BEG  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |      |       |          |



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SYS -- ZZZ  
REPORT NO. NMP815

J.O.NO. 1217700  
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PROJECT EQUIPMENT SYSTEM  
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|--------------|----------------------------------------------------------------------------------------------|---------------|-------|---------|-------|-------|----------|
| *****        | *****                                                                                        | *****         | ***** | *****   | ***** | ***** | *****    |
| 2NJP-36      | STR CU CA N JKT SHLD<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS                         | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BEF  |
| 2NJP-37      | STR CU CA N JKT SHLD<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS                         | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BEE  |
| 2NJP-38      | STR CU CA N JKT SHLD<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS                         | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BED  |
| 2NJP-40      | STR CU CA 2 TH PR OA SHD H JKT OKONITE CO<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS    |               | E024P | A       | ALL   | H     | E024PAI  |
| 2NJP-41      | STR CU CA 5 TH PR OA SHD H JKT OKONITE CO<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS    |               | E024P | A       | ALL   | H     | E024PAJ  |
| 2NJP-42      | STR CU CA 9 TH PR OA SHD H JKT OKONITE CO<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS    |               | E024P | A       | ALL   | H     | E024PAK  |
| 2NJP-43      | STR CU CA 19TH PR OA SHD H JKT OKONITE CO<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS    |               | E024P | A       | ALL   | H     | E024PAL  |
| 2NJP-45      | STR CU CA 1 TH PR OA SHD H JKT OKONITE CO<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS    |               | E024P | A       | ALL   | H     | E024PAH  |
| 2NJP-51      | COAXIAL/TRIAXIAL CABLE<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS                       | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BXF  |
| 2NJP-52      | COAXIAL/TRIAXIAL CABLE<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS                       | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BXG  |
| 2NJP-57      | STR CU CA H JKT SHLD<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS                         | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BEA  |
| 2NJP-61      | STR CU CA H JKT SHLD<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS                         | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BEB  |
| 2NJP-63      | RG-11A/U COAX CA<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS                             | BRAND-REX     | E0906 | A       | ALL   | H     | E0906BA  |
| 2NJP-67      | STR CU CA 1 TH PR THERMO INS J ROCKBESTOS CO<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS |               | E024B | A       | ALL   | H     | E024BBO  |
| 2NJP-68      | STR CU CA 1 THPR OA SHLD B-G<br>REMARKS:SEE SCEH SHEET FOR ZONE RESTRICTIONS                 | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BCF  |



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SYS -- ZZZ  
REPORT NO. NIP815

J.O.NO. 1217700  
JOB NAME NINE HILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                  | VENDOR NAME   | SPEC  | EQ STAT | ZONE  | ZNIND | QUAL REF |
|--------------|----------------------------------------------|---------------|-------|---------|-------|-------|----------|
| *****        | *****                                        | *****         | ***** | *****   | ***** | ***** | *****    |
| 2NJP-69      | STR CU CA 10 THPR OA S82 INS                 | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BCC  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-70      | STR CU CA 6 THPR THERMO INS J                | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BBH  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-72      | STR CU CA 1 THPR TH INS J B-G                | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BBJ  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-73      | STR CU CA 1 THPR TH IN J BL-R                | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BBK  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-74      | STR CU CA 1 THPR THERMO INS J                | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BBL  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-75      | STR CU CA XPLE INS 90C H                     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BAG  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-76      | STR CU CA XPLE INS 90C B                     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BAD  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-77      | STR CU CA XPLE INS 90C H                     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BAF  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-78      | STR CU CA XPLE INS 90C B                     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BAC  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-79      | STR CU CA XPLE INS 90C H                     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BAE  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-80      | STR CU CA XPLE INS 90C B                     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BAB  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-81      | STR CU CA XPLE INS 90C R                     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BAH  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-82      | STR CU CA XPLE INS 90C O                     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BAI  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-83      | STR CU CA XPLE INS 90C B                     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BAJ  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |
| 2NJP-84      | STR CU CA XPLE INS 90C R                     | ROCKBESTOS CO | E024B | A       | ALL   | H     | E024BAK  |
|              | REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS |               |       |         |       |       |          |





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SYS -- ZZZ  
REPORT NO. NNP815

J.O.NO. 1217700  
JOB NAME NINE MILE - UNIT 2  
JOB CLIENT NIAGARA MOHAWK

PROJECT EQUIPMENT SYSTEM  
EQUIPMENT QUALIFICATION MASTER LIST  
USER SPECIFIED REPORT  
SORTED BY SYS/EQ1  
SELECTED FOR ZNIND IS H

REPORT DATE 03/25/86  
UPDATE DATE 03/24/86  
RESET NO. 020  
RESET DATE 02/27/86

| EQUIPMENT ID | DESCRIPTION                                                              | VENDOR NAME   | SPEC  | EQ STAT | ZONE | ZNIND | QUAL REF |
|--------------|--------------------------------------------------------------------------|---------------|-------|---------|------|-------|----------|
| 2NJP-85      | STR CU CA XPLE INS 90C O<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BAL  |
| 2NJP-86      | STR CU CA XPLE INS 90C B<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BAH  |
| 2NJP-87      | STR CU CA XPLE INS 90C R<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BAN  |
| 2NJP-88      | STR CU CA XPLE INS 90C O<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BBI  |
| 2NJP-90      | STR CU CA XLPE INS 90C G<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BAP  |
| 2NJP-91      | STR CU CA XLPE INS 90C G<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BAR  |
| 2NJP-94      | STR CU CA XLPE INS 90C G<br>REMARKS:SEE SCEW SHEET FOR ZONE RESTRICTIONS | ROCKBESTOS CO | E024B | A       | ALL  | H     | E024BAQ  |



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NIP2-ENVIRONMENTAL QUALIFICATION DATA MASTER LIST (NSSS)  
SORTED BY MARK NUMBER

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*****
MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP  EQUALST  QUAL REF
SHEC ID.
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|                          |                      |  |          |       |   |         |
|--------------------------|----------------------|--|----------|-------|---|---------|
| B13-D192A                | IRM DETECTOR CONN    |  | PC261207 | HARSH | A | P800AAA |
| B13-D192B                | IRM DETECTOR CONN    |  | PC261207 | HARSH | A | P800AAB |
| B13-D192C                | IRM DETECTOR CONN    |  | PC261207 | HARSH | A | P800AAC |
| B13-D192D                | IRM DETECTOR CONN    |  | PC261207 | HARSH | A | P800AAD |
| B13-D192E                | IRM DETECTOR CONN    |  | PC261207 | HARSH | A | P800AAE |
| B13-D192F                | IRM DETECTOR CONN    |  | PC261207 | HARSH | A | P800AAF |
| B13-D192G                | IRM DETECTOR CONN    |  | PC261207 | HARSH | A | P800AAG |
| B13-D192H                | IRM DETECTOR CONN    |  | PC261207 | HARSH | A | P800AAH |
| B13-D192J                | SRM DETECTOR CONN    |  | PC261207 | HARSH | A | P800AAI |
| B13-D192K                | SRM DETECTOR CONN    |  | PC261207 | HARSH | A | P800AAJ |
| B13-D192L                | SRM DETECTOR CONN    |  | PC261207 | HARSH | A | P800AAK |
| B13-D192M                | SRM DETECTOR CONN    |  | PC261207 | HARSH | A | P800AAL |
| B13-D193                 | POWER RANGE DETECTOR |  | PC261207 | HARSH | A | P800AAH |
| B13-D194                 | POWER RANGE DET CONN |  | PC261207 | HARSH | A | P800AAN |
| B22-F013A<br>2HSS*PSV133 | SAFETY RELIEF VALVE  |  | PC289685 | HARSH | A | P800AAO |
| B22-F013B<br>2HSS*PSV128 | SAFETY RELIEF VALVE  |  | PC289683 | HARSH | A | P800AAP |
| B22-F013C<br>2HSS*PSV137 | SAFETY RELIEF VALVE  |  | PC289679 | HARSH | A | P800AAQ |
| B22-F013D<br>2HSS*PSV123 | SAFETY RELIEF VALVE  |  | PC289679 | HARSH | A | P800AAR |
| B22-F013E<br>2HSS*PSV136 | SAFETY RELIEF VALVE  |  | PC289679 | HARSH | A | P800AAS |
| B22-F013F<br>2HSS*PSV122 | SAFETY RELIEF VALVE  |  | PC289679 | HARSH | A | P800AAT |



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NMP2-ENVIRONMENTAL QUALIFICATION DATA MASTER LIST (NSSS)  
SORTED BY MARK NUMBER

| MARK NO<br>SHEC ID.      | EQUIPMENT DESCRIPTION | REMARKS | ENV. ZONE | ENVTP   | EQUALST | QUAL REF |
|--------------------------|-----------------------|---------|-----------|---------|---------|----------|
| B22-F013G<br>2HSS*PSV132 | SAFETY RELIEF VALVE   |         | PC289685  | HARSH A |         | P800AAU  |
| B22-F013H<br>2HSS*PSV127 | SAFETY RELIEF VALVE   |         | PC289683  | HARSH A |         | P800AAV  |
| B22-F013J<br>2HSS*PSV131 | SAFETY RELIEF VALVE   |         | PC289685  | HARSH A |         | P800AAH  |
| B22-F013K<br>2HSS*PSV126 | SAFETY RELIEF VALVE   |         | PC289683  | HARSH A |         | P800AAX  |
| B22-F013L<br>2HSS*PSV135 | SAFETY RELIEF VALVE   |         | PC289679  | HARSH A |         | P800AAZ  |
| B22-F013M<br>2HSS*PSV121 | SAFETY RELIEF VALVE   |         | PC289679  | HARSH A |         | P800AAZ  |
| B22-F013N<br>2HSS*PSV134 | SAFETY RELIEF VALVE   |         | PC289679  | HARSH A |         | P800ABA  |
| B22-F013P<br>2HSS*PSV120 | SAFETY RELIEF VALVE   |         | PC289679  | HARSH A |         | P800ABB  |
| B22-F013R<br>2HSS*PSV130 | SAFETY RELIEF VALVE   |         | PC289685  | HARSH A |         | P800ABC  |
| B22-F013S<br>2HSS*PSV125 | SAFETY RELIEF VALVE   |         | PC289683  | HARSH A |         | P800ABD  |
| B22-F013U<br>2HSS*PSV129 | SAFETY RELIEF VALVE   |         | PC289685  | HARSH A |         | P800ABE  |
| B22-F013V<br>2HSS*PSV124 | SAFETY RELIEF VALVE   |         | PC289683  | HARSH A |         | P800ABF  |
| B22-N044A<br>2ISC*LT13A  | LEVEL TRANSMITTER     | RG 1.97 | SC215122  | HARSH A |         | P800ABG  |
| B22-N044B<br>2ISC*LT13B  | LEVEL TRANSMITTER     | RG 1.97 | SC215122  | HARSH A |         | P800ABH  |
| B22-N062A<br>2ISC*PT6A   | PRESSURE TRANSMITTER  | RG 1.97 | SC261145  | HARSH A |         | P800ABI  |



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NMP2-ENVIRONMENTAL QUALIFICATION DATA MASTER LIST (NSSS)  
SORTED BY MARK NUMBER

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*****
MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENV TYP  EQUALST  QUAL REF
SHEC ID.
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|                           |                      |         |          |         |  |         |
|---------------------------|----------------------|---------|----------|---------|--|---------|
| B22-N062B<br>2ISC*PT6B    | PRESSURE TRANSMITTER | RG 1.97 | SC261145 | HARSH A |  | P800ABJ |
| B22-N067C<br>2ISC*PT16B   | PRESSURE TRANSMITTER |         | SC261145 | HARSH A |  | P800ABK |
| B22-N067G<br>2ISC*PT16D   | PRESSURE TRANSMITTER |         | SC261145 | HARSH A |  | P800ABL |
| B22-N067L<br>2ISC*PT16A   | PRESSURE TRANSMITTER |         | SC261145 | HARSH A |  | P800ABH |
| B22-N067R<br>2ISC*PT16C   | PRESSURE TRANSMITTER |         | SC261145 | HARSH A |  | P800ABN |
| B22-N068A<br>2ISC*PT5A    | PRESSURE TRANSMITTER |         | SC261145 | HARSH A |  | P800ABO |
| B22-N068E<br>2ISC*PT5D    | PRESSURE TRANSMITTER |         | SC261145 | HARSH A |  | P800ABP |
| B22-N073C ,<br>2ISC*LT10B | LEVEL TRANSMITTER    |         | SC261145 | HARSH A |  | P800ABQ |
| B22-N073G<br>2ISC*LT10D   | LEVEL TRANSMITTER    |         | SC261145 | HARSH A |  | P800ABR |
| B22-N073L<br>2ISC*LT10A   | LEVEL TRANSMITTER    |         | SC261145 | HARSH A |  | P800ABS |
| B22-N073R<br>2ISC*LT10C   | LEVEL TRANSMITTER    |         | SC261145 | HARSH A |  | P800ABT |
| B22-N075A<br>2CNI*PT46A   | PRESSURE TRANSMITTER |         | TB306780 | HARSH A |  | P800ABU |
| B22-N075B<br>2CNI*PT46B   | PRESSURE TRANSMITTER |         | TB306780 | HARSH A |  | P800ABV |
| B22-N075C<br>2CNI*PT46C   | PRESSURE TRANSMITTER |         | TB306780 | HARSH A |  | P800ABW |
| B22-N075D<br>2CNI*PT46D   | PRESSURE TRANSMITTER |         | TB306780 | HARSH A |  | P800ABX |





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NMP2-ENVIRONMENTAL QUALIFICATION DATA MASTER LIST (NSSS)  
SORTED BY MARK NUMBER

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*****
MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP EQUALST  QUAL REF
SHEC ID.
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|                         |                      |  |          |         |         |
|-------------------------|----------------------|--|----------|---------|---------|
| B22-N076A<br>2HSS*PT20A | PRESSURE TRANSHITTER |  | TB289761 | HARSH A | P800ABY |
| B22-N076B<br>2HSS*PT20B | PRESSURE TRANSHITTER |  | TB289761 | HARSH A | P800ABZ |
| B22-N076C<br>2HSS*PT20C | PRESSURE TRANSHITTER |  | TB289761 | HARSH A | P800ACA |
| B22-N076D<br>2HSS*PT20D | PRESSURE TRANSHITTER |  | TB289761 | HARSH A | P800ACB |
| B22-N078A<br>2ISC*PT4C  | PRESSURE TRANSHITTER |  | SC261145 | HARSH A | P800ACC |
| B22-N078B<br>2ISC*PT4B  | PRESSURE TRANSHITTER |  | SC261145 | HARSH A | P800ACD |
| B22-N078C<br>2ISC*PT4A  | PRESSURE TRANSHITTER |  | SC261145 | HARSH A | P800ACE |
| B22-N078D<br>2ISC*PT4D  | PRESSURE TRANSHITTER |  | SC261145 | HARSH A | P800ACF |
| B22-N080A<br>2ISC*LT7C  | LEVEL TRANSHITTER    |  | SC261145 | HARSH A | P800ACG |
| B22-N080B<br>2ISC*LT7B  | LEVEL TRANSHITTER    |  | SC261145 | HARSH A | P800ACH |
| B22-N080C<br>2ISC*LT7A  | LEVEL TRANSHITTER    |  | SC261145 | HARSH A | P800ACI |
| B22-N080D<br>2ISC*LT7D  | LEVEL TRANSHITTER    |  | SC261145 | HARSH A | P800ACJ |
| B22-N081A<br>2ISC*LT11A | LEVEL TRANSHITTER    |  | SC261145 | HARSH A | P800ACK |
| B22-N081B<br>2ISC*LT11B | LEVEL TRANSHITTER    |  | SC261145 | HARSH A | P800ACL |
| B22-N081C<br>2ISC*LT11C | LEVEL TRANSHITTER    |  | SC261145 | HARSH A | P800ACH |



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NH2-ENVIRONMENTAL QUALIFICATION DATA MASTER LIST (NSSS)  
SORTED BY MARK NUMBER

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*****
MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP  EQUALST  QUAL REF
SHEC ID.
*****
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|                         |                      |         |          |       |   |         |
|-------------------------|----------------------|---------|----------|-------|---|---------|
| B22-N081D<br>2ISC*LT11D | LEVEL TRANSHITTER    |         | SC261145 | HARSH | A | P800ACN |
| B22-N091A<br>2ISC*LT9A  | LEVEL TRANSHITTER    | RG 1.97 | SC261145 | HARSH | A | P800ACO |
| B22-N091B<br>2ISC*LT9B  | LEVEL TRANSHITTER    | RG 1.97 | SC261145 | HARSH | A | P800ACP |
| B22-N091E<br>2ISC*LT9C  | LEVEL TRANSHITTER    | RG 1.97 | SC261145 | HARSH | A | P800ACQ |
| B22-N091F<br>2ISC*LT9D  | LEVEL TRANSHITTER    | RG 1.97 | SC261145 | HARSH | A | P800ACR |
| B22-N094A<br>2ISC*PT17A | PRESSURE TRANSHITTER |         | SC261145 | HARSH | A | P800ACS |
| B22-N094B<br>2ISC*PT17B | PRESSURE TRANSHITTER |         | SC261145 | HARSH | A | P800ACT |
| B22-N094E<br>2ISC*PT17C | PRESSURE TRANSHITTER |         | SC261145 | HARSH | A | P800ACU |
| B22-N094F<br>2ISC*PT17D | PRESSURE TRANSHITTER |         | SC261145 | HARSH | A | P800ACV |
| B22-N095A<br>2ISC*LT12A | LEVEL TRANSHITTER    |         | SC261145 | HARSH | A | P800ACH |
| B22-N095B<br>2ISC*LT12B | LEVEL TRANSHITTER    |         | SC261145 | HARSH | A | P800ACX |
| B22-N402A<br>2ISC*LT8A  | LEVEL TRANSHITTER    |         | SC261145 | HARSH | A | P800ACY |
| B22-N402B<br>2ISC*LT8C  | LEVEL TRANSHITTER    |         | SC261145 | HARSH | A | P800ACZ |
| B22-N402E<br>2ISC*LT8B  | LEVEL TRANSHITTER    |         | SC261145 | HARSH | A | P800ADA |
| B22-N402F<br>2ISC*LT8D  | LEVEL TRANSHITTER    |         | SC261145 | HARSH | A | P800ADB |



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NMP2-ENVIRONMENTAL QUALIFICATION DATA MASTER LIST (NSSS)  
SORTED BY MARK NUMBER\*\*\*\*\*  
MARK NO EQUIPMENT DESCRIPTION REMARKS ENV. ZONE ENVTYP EQUALST QUAL REF  
SPEC ID.  
\*\*\*\*\*

|                          |                      |  |          |         |         |
|--------------------------|----------------------|--|----------|---------|---------|
| B22-N403A<br>2ISC*PT2A   | PRESSURE TRANSHITTER |  | SC261145 | HARSH A | P800ADC |
| B22-N403B<br>2ISC*PT2C   | PRESSURE TRANSHITTER |  | SC261145 | HARSH A | P800ADD |
| B22-N403E<br>2ISC*PT2B   | PRESSURE TRANSHITTER |  | SC261145 | HARSH A | P800ADE |
| B22-N403F<br>2ISC*PT2D   | PRESSURE TRANSHITTER |  | SC261145 | HARSH A | P800ADF |
| B35-N014A<br>2RCS*FT6A   | FLOW TRANSHITTER     |  | SC215122 | HARSH A | P800ADG |
| B35-N014B<br>2RCS*FT8A   | FLOW TRANSHITTER     |  | SC215122 | HARSH A | P800ADH |
| B35-N014C<br>2RCS*FT7A   | FLOW TRANSHITTER     |  | SC215122 | HARSH A | P800ADI |
| B35-N014D<br>2RCS*FT9A   | FLOW TRANSHITTER     |  | SC215122 | HARSH A | P800ADJ |
| B35-N024A<br>2RCS*FT6B   | FLOW TRANSHITTER     |  | SC215122 | HARSH A | P800ADN |
| B35-N024B<br>2RCS*FT8B   | FLOW TRANSHITTER     |  | SC215122 | HARSH A | P800ADO |
| B35-N024C<br>2RCS*FT7B   | FLOW TRANSHITTER     |  | SC215122 | HARSH A | P800ADP |
| B35-N024D<br>2RCS*FT9B   | FLOW TRANSHITTER     |  | SC215122 | HARSH A | P800ADQ |
| C12-D001<br>2RDS         | HCU PILOT SCRAM SOL  |  | SC261145 | HARSH A | P800ADT |
| C12-F009<br>2RDS*SOVX154 | SDV SOLENOID VALVE   |  | SC261145 | HARSH A | P800ADU |
| C12-F110A<br>2RDS*SOV138 | BACKUP SCRAM SOL     |  | SC261145 | HARSH A | P800ADX |



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MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP EQUALST  QUAL REF
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| C12-F110B<br>2RDS*SOV137 | BACKUP SCRAM SOL    |  | SC261145 | HARSH A | P800ADY |
| C12-F160A<br>2RDS*SOV162 | ARI VALVE           |  | SC261145 | HARSH A | P800ADZ |
| C12-F160B<br>2RDS*SOV163 | ARI VALVE           |  | SC261145 | HARSH A | P800AEA |
| C12-F162A<br>2RDS*SOV156 | ARI VALVE           |  | SC261145 | HARSH A | P800AEB |
| C12-F162B<br>2RDS*SOV157 | ARI VALVE           |  | SC261145 | HARSH A | P800AEC |
| C12-F162C<br>2RDS*SOV158 | ARI VALVE           |  | SC261145 | HARSH A | P800AED |
| C12-F162D<br>2RDS*SOV159 | ARI VALVE           |  | SC261145 | HARSH A | P800AEE |
| C12-F163A<br>2RDS*SOV160 | ARI VALVE           |  | SC261145 | HARSH A | P800AEF |
| C12-F163B<br>2RDS*SOV161 | ARI VALVE           |  | SC261145 | HARSH A | P800AEG |
| C12-F182<br>2RDS*SOVX155 | SCRAM AIR CONTROL V |  | SC261145 | HARSH A | P800AEJ |
| C12-N012A<br>2RDS*LTY12B | LEVEL TRANSHITTER   |  | SC261145 | HARSH A | P800AEL |
| C12-N012B<br>2RDS*LTX12B | LEVEL TRANSHITTER   |  | SC261145 | HARSH A | P800AEM |
| C12-N012C<br>2RDS*LTY12A | LEVEL TRANSHITTER   |  | SC261145 | HARSH A | P800AEN |
| C12-N012D<br>2RDS*LTX12A | LEVEL TRANSHITTER   |  | SC261145 | HARSH A | P800AEO |
| C12-N013A<br>2RDS*LSY11A | LEVEL SWITCH        |  | SC261145 | HARSH A | P800AEP |





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MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP  EQUALST  QUAL REF
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|--------------------------|----------------------|---------|----------|---------|--|---------|
| C12-N013B<br>2RDS*LSX11A | LEVEL SWITCH         |         | SC261145 | HARSH A |  | P800AEQ |
| C12-N013C<br>2RDS*LSY11B | LEVEL SWITCH         |         | SC261145 | HARSH A |  | P800AER |
| C12-N013D<br>2RDS*LSX11B | LEVEL SWITCH         |         | SC261145 | HARSH A |  | P800AES |
| C41-C001A<br>2SLS*P1A    | SLC MOTOR            |         | SC289155 | HARSH A |  | P800AET |
| C41-C001B<br>2SLS*P1B    | SLC MOTOR            |         | SC289155 | HARSH A |  | P800AEU |
| C41-F004A<br>2SLS*VEX3A  | SLC CONTROL VALVE    |         | SC289155 | HARSH A |  | P800AEX |
| C41-F004B<br>2SLS*VEX3B  | SLC CONTROL VALVE    |         | SC289155 | HARSH A |  | P800AEY |
| C41-N001<br>2SLS*LT103   | LEVEL TRANSHITTER    | RG 1.97 | SC289155 | HARSH A |  | P800AEZ |
| C41-N003<br>2SLS*TS102   | TEMPERATURE SWITCH   |         | SC289155 | HARSH A |  | P800AFA |
| C41-N004A<br>2SLS*PT4A   | PRESSURE TRANSHITTER |         | SC289155 | HARSH A |  | P800AFB |
| C41-N004B<br>2SLS*PT4B   | PRESSURE TRANSHITTER |         | SC289155 | HARSH A |  | P800AFC |
| C41-N007<br>2SLS*FT113   | FLOW TRANSHITTER     | RG 1.97 | SC289155 | HARSH A |  | P800AFD |
| C41-N010A<br>2SLS*LT6A   | LEVEL TRANSHITTER    |         | SC289155 | HARSH A |  | P800AFE |
| C41-N010B<br>2SLS*LT6B   | LEVEL TRANSHITTER    |         | SC289155 | HARSH A |  | P800AFF |
| C41-N010C<br>2SLS*LT6C   | LEVEL TRANSHITTER    |         | SC289155 | HARSH A |  | P800AFG |



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|------------------------|----------------------|--|----------|-------|---|--|---------|
| C41-N010D<br>2SLS*LT6D | LEVEL TRANSHITTER    |  | SC289155 | HARSH | A |  | P800AFH |
| C51-K002A<br>2NHS      | VOLTAGE PREAMPLIFIER |  | SC240135 | HARSH | A |  | P800AFR |
| C51-K002B<br>2NHS      | VOLTAGE PREAMPLIFIER |  | SC240135 | HARSH | A |  | P800AFS |
| C51-K002C<br>2NHS      | VOLTAGE PREAMPLIFIER |  | SC240135 | HARSH | A |  | P800AFT |
| C51-K002D<br>2NHS      | VOLTAGE PREAMPLIFIER |  | SC240135 | HARSH | A |  | P800AFU |
| C51-K002E<br>2NHS      | VOLTAGE PREAMPLIFIER |  | SC240135 | HARSH | A |  | P800AFV |
| C51-K002F<br>2NHS      | VOLTAGE PREAMPLIFIER |  | SC240135 | HARSH | A |  | P800AFH |
| C51-K002G<br>2NHS      | VOLTAGE PREAMPLIFIER |  | SC240135 | HARSH | A |  | P800AFX |
| C51-K002H<br>2NHS      | VOLTAGE PREAMPLIFIER |  | SC240135 | HARSH | A |  | P800AFY |
| C51-N002A<br>2NHS      | INT RANGE DETECTOR   |  | PC261207 | HARSH | A |  | P800AGD |
| C51-N002B<br>2NHS      | INT RANGE DETECTOR   |  | PC261207 | HARSH | A |  | P800AGE |
| C51-N002C<br>2NHS      | INT RANGE DETECTOR   |  | PC261207 | HARSH | A |  | P800AGF |
| C51-N002D<br>2NHS      | INT RANGE DETECTOR   |  | PC261207 | HARSH | A |  | P800AGG |
| C51-N002E<br>2NHS      | INT RANGE DETECTOR   |  | PC261207 | HARSH | A |  | P800AGH |
| C51-N002F<br>2NHS      | INT RANGE DETECTOR   |  | PC261207 | HARSH | A |  | P800AGI |



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|-------------------------|----------------------|--|----------|-------|---|---------|
| C51-N002G<br>2NIS       | INT RANGE DETECTOR   |  | PC261207 | HARSH | A | P800AGJ |
| C51-N002H<br>2NIS       | INT RANGE DETECTOR   |  | PC261207 | HARSH | A | P800AGK |
| C72-N050A<br>2ISC*PT15C | PRESSURE TRANSHITTER |  | SC261145 | HARSH | A | P800AGL |
| C72-N050B<br>2ISC*PT15B | PRESSURE TRANSHITTER |  | SC261145 | HARSH | A | P800AGH |
| C72-N050C<br>2ISC*PT15A | PRESSURE TRANSHITTER |  | SC261145 | HARSH | A | P800AGN |
| C72-N050D<br>2ISC*PT15D | PRESSURE TRANSHITTER |  | SC261145 | HARSH | A | P800AGO |
| C72-N052A<br>2HSS*PT16A | PRESSURE TRANSHITTER |  | TB289761 | HARSH | A | P800AGP |
| C72-N052B<br>2HSS*PT16B | PRESSURE TRANSHITTER |  | TB289761 | HARSH | A | P800AGQ |
| C72-N052C<br>2HSS*PT16C | PRESSURE TRANSHITTER |  | TB289761 | HARSH | A | P800AGR |
| C72-N052D<br>2HSS*PT16D | PRESSURE TRANSHITTER |  | TB289761 | HARSH | A | P800AGS |
| D13-N003A<br>2HSS*RE46A | INSULATED DETECTOR   |  | HST24045 | HARSH | A | P800AGT |
| D13-N003B<br>2HSS*RE46B | INSULATED DETECTOR   |  | HST24045 | HARSH | A | P800AGU |
| D13-N003C<br>2HSS*RE46C | INSULATED DETECTOR   |  | HST24045 | HARSH | A | P800AGV |
| D13-N003D<br>2HSS*RE46D | INSULATED DETECTOR   |  | HST24045 | HARSH | A | P800AGH |
| E12-C002A<br>2RHS*H1A   | RHR MOTOR            |  | ABN17504 | HARSH | A | P800AGX |



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| E12-C002B<br>2RHS*H1B   | RHR MOTOR            |         | ABS17509 | HARSH | A | P800AGY |
| E12-C002C<br>2RHS*H1C   | RHR MOTOR            |         | ABS17508 | HARSH | A | P800AGZ |
| E12-N007A<br>2SHP*FT13A | FLOW TRANSHITTER     | RG 1.97 | SC175105 | HARSH | A | P800AHJ |
| E12-N007B<br>2SHP*FT13B | FLOW TRANSHITTER     | RG 1.97 | SC175109 | HARSH | A | P800AHK |
| E12-N008A<br>2RHS*LT28A | LEVEL TRANSHITTER    |         | ABN17506 | HARSH | A | P800AHL |
| E12-N008B<br>2RHS*LT28B | LEVEL TRANSHITTER    |         | ABS17511 | HARSH | A | P800AHM |
| E12-N013<br>2RHS*FT105  | FLOW TRANSHITTER     |         | SC261145 | HARSH | A | P800AHN |
| E12-N015A<br>2RHS*FT14A | FLOW TRANSHITTER     | RG 1.97 | SC175105 | HARSH | A | P800AHO |
| E12-N015B<br>2RHS*FT14B | FLOW TRANSHITTER     | RG 1.97 | SC175109 | HARSH | A | P800AHD |
| E12-N015C<br>2RHS*FT14C | FLOW TRANSHITTER     | RG 1.97 | SC175109 | HARSH | A | P800AHP |
| E12-N026A<br>2RHS*PT21A | PRESSURE TRANSHITTER |         | SC175102 | HARSH | A | P800AHQ |
| E12-N026B<br>2RHS*PT21B | PRESSURE TRANSHITTER |         | SC175109 | HARSH | A | P800AHR |
| E12-N028<br>2RHS*PT114  | PRESSURE TRANSHITTER |         | SC175109 | HARSH | A | P800AHU |
| E12-N050A<br>2RHS*PT76A | PRESSURE TRANSHITTER |         | SC175105 | HARSH | A | P800AHV |
| E12-N050B<br>2RHS*PT76B | PRESSURE TRANSHITTER |         | SC175109 | HARSH | A | P800AHH |





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MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP  EQUALST  QUAL REF
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| E12-N051A<br>2RHS*PT75A | PRESSURE TRANSHITTER |  | SC175105 | HARSH | A |  | P800AHX |
| E12-N051B<br>2RHS*PT75B | PRESSURE TRANSHITTER |  | SC175109 | HARSH | A |  | P800AHY |
| E12-N052A<br>2RHS*FT86A | FLOW TRANSHITTER     |  | SC175105 | HARSH | A |  | P800AHZ |
| E12-N052B<br>2RHS*FT86B | FLOW TRANSHITTER     |  | SC175109 | HARSH | A |  | P800AIA |
| E12-N052C<br>2RHS*FT86C | FLOW TRANSHITTER     |  | SC175109 | HARSH | A |  | P800AIB |
| E12-N053A<br>2RHS*PT7A  | PRESSURE TRANSHITTER |  | SC175102 | HARSH | A |  | P800AIC |
| E12-N053B<br>2RHS*PT7B  | PRESSURE TRANSHITTER |  | SC175109 | HARSH | A |  | P800AID |
| E12-N053C<br>2RHS*PT7C  | PRESSURE TRANSHITTER |  | SC175109 | HARSH | A |  | P800AIE |
| E12-N055A<br>2RHS*PT5A  | PRESSURE TRANSHITTER |  | SC175105 | HARSH | A |  | P800AIF |
| E12-N055B<br>2RHS*PT5B  | PRESSURE TRANSHITTER |  | SC175109 | HARSH | A |  | P800AIG |
| E12-N055C<br>2RHS*PT5C  | PRESSURE TRANSHITTER |  | SC175109 | HARSH | A |  | P800AIH |
| E12-N056A<br>2RHS*PT6A  | PRESSURE TRANSHITTER |  | SC175105 | HARSH | A |  | P800AIJ |
| E12-N056B<br>2RHS*PT6B  | PRESSURE TRANSHITTER |  | SC175109 | HARSH | A |  | P800AIK |
| E12-N056C<br>2RHS*PT6C  | PRESSURE TRANSHITTER |  | SC175109 | HARSH | A |  | P800AIL |
| E12-N057<br>2RHS*PT111  | PRESSURE TRANSHITTER |  | SC175102 | HARSH | A |  | P800AIH |



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| E12-N058A<br>2RHS*PDT24A | DIFF PRESSURE TRANSH |         | SC261145 | HARSH A | P800AIN |
| E12-N058B<br>2RHS*PDT24B | DIFF PRESSURE TRANSH |         | SC261145 | HARSH A | P800AIO |
| E12-N058C<br>2RHS*PDT24C | DIFF PRESSURE TRANSH |         | SC261145 | HARSH A | P800AIP |
| E12-N060A<br>2RHS*PDT18A | DIFF PRESSURE TRANS  |         | SC175102 | HARSH A | P800AIQ |
| E12-N060B<br>2RHS*PDT18B | DIFF PRESSURE TRANSH |         | SC175109 | HARSH A | P800AIR |
| E12-N062<br>2RHS*PT133   | PRESSURE TRANSHITTER |         | SC175102 | HARSH A | P800AIS |
| E12-N063A<br>2RHS*FT3A   | PRESSURE TRANSHITTER |         | SC175102 | HARSH A | P800AIT |
| E12-N063B<br>2RHS*PT3B   | PRESSURE TRANSHITTER |         | SC175111 | HARSH A | P800AIU |
| E12-N095<br>2RHS*PT3C    | PRESSURE TRANSHITTER |         | SC175111 | HARSH A | P800AIV |
| E21-C001<br>2CSL*P1      | LPCS MOTOR           |         | ABN17503 | HARSH A | P800AIH |
| E21-N003<br>2CSL*FT126   | FLOW TRANSHITTER     |         | SC175102 | HARSH A | P800AIX |
| E21-N050<br>2CSL*PDT132  | DIFF PRESSURE TRANSH |         | SC175102 | HARSH A | P800AIY |
| E21-N051<br>2CSL*FT107   | FLOW TRANSHITTER     | RG 1.97 | SC175102 | HARSH A | P800AIZ |
| E21-N052<br>2CSL*PT109   | PRESSURE TRANSHITTER |         | SC175102 | HARSH A | P800AJA |
| E21-N053<br>2CSL*PT110   | PRESSURE TRANSHITTER |         | SC175102 | HARSH A | P800AJB |



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MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP  EQUALST  QUAL REF
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|-------------------------|----------------------|---------|----------|-------|---|---------|
| E21-N054<br>2CSL*PT108  | PRESSURE TRANSHITTER |         | SC175102 | HARSH | A | P800AJC |
| E21-N056<br>2CSL*PT129  | PRESSURE TRANSHITTER |         | SC175103 | HARSH | A | P800AJD |
| E21-N057<br>2CSL*PT130  | PRESSURE TRANSHITTER |         | SC175103 | HARSH | A | P800AJE |
| E22-C001<br>2CSH*P1     | HPCS MOTOR           |         | SC175108 | HARSH | A | P800AJF |
| E22-F001<br>2CSH*MOV101 | HPCS NTR OPER VALVE  |         | SC175109 | HARSH | A | P800AJG |
| E22-F004<br>2CSH*MOV107 | HPCS NTR OPER VALVE  | RG 1.97 | SC289155 | HARSH | A | P800AJH |
| E22-F010<br>2CSH*MOV110 | HPCS NTR OPER VALVE  |         | SC196116 | HARSH | A | P800AJJ |
| E22-F011<br>2CSH*MOV112 | HPCS NTR OPER VALVE  |         | SC196116 | HARSH | A | P800AJK |
| E22-F012<br>2CSH*MOV105 | HPCS NTR OPER VALVE  | RG 1.97 | SC215122 | HARSH | A | P800AJL |
| E22-F015<br>2CSH*MOV118 | HPCS NTR OPER VALVE  | RG 1.97 | SC196116 | HARSH | A | P800AJM |
| E22-F023<br>2CSH*MOV111 | HPCS NTR OPER VALVE  | RG 1.97 | SC215122 | HARSH | A | P800AJN |
| E22-N005<br>2CSH*FT104  | FLOW TRANSHITTER     |         | SC175105 | HARSH | A | P800AJO |
| E22-N050<br>2CSH*PT117  | PRESSURE TRANSHITTER |         | SC175105 | HARSH | A | P800AJR |
| E22-N051<br>2CSH*PT105  | PRESSURE TRANSHITTER |         | SC175105 | HARSH | A | P800AJS |
| E22-N052<br>2CSH*PT102  | PRESSURE TRANSHITTER |         | SC175105 | HARSH | A | P800AJT |



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MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP  EQUALST  QUAL REF
SPEC ID.
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|-------------------------|----------------------|---------|----------|-------|---|---------|
| E22-N054C<br>2CSH*LT3A  | LEVEL TRANSMITTER    |         | RB240218 | HARSH | A | P800AJU |
| E22-N054G<br>2CSH*LT3B  | LEVEL TRANSMITTER    |         | RB240218 | HARSH | A | P800AJV |
| E22-N055C<br>2CSH*LT124 | LEVEL TRANSMITTER    |         | SC175105 | HARSH | A | P800AJH |
| E22-N055G<br>2CSH*LT123 | LEVEL TRANSMITTER    |         | SC175105 | HARSH | A | P800AJX |
| E22-N056<br>2CSH*FT105  | FLOW TRANSMITTER     | RG 1.97 | SC175105 | HARSH | A | P800AJY |
| E22-N057<br>2CSH*PDT109 | DIFF PRESSURE TRANSH |         | SC175105 | HARSH | A | P800AJZ |
| E31-N003A<br>2NCS*TE33A | TEMPERATURE ELEMENT  |         | SC215127 | HARSH | A | P800AKN |
| E31-N003B<br>2NCS*TE33B | TEMPERATURE ELEMENT  |         | SC215127 | HARSH | A | P800AKO |
| E31-N003C<br>2NCS*TE33C | TEMPERATURE ELEMENT  |         | SC215128 | HARSH | A | P800AKP |
| E31-N003D<br>2NCS*TE33D | TEMPERATURE ELEMENT  |         | SC215128 | HARSH | A | P800AKQ |
| E31-N003E<br>2NCS*TE33E | TEMPERATURE ELEMENT  |         | SC306176 | HARSH | A | P800AKR |
| E31-N003F<br>2NCS*TE33F | TEMPERATURE ELEMENT  |         | SC306176 | HARSH | A | P800AKS |
| E31-N004A<br>2ICS*TE16A | TEMPERATURE ELEMENT  |         | SC175106 | HARSH | A | P800AKT |
| E31-N004B<br>2ICS*TE16B | TEMPERATURE ELEMENT  |         | SC175106 | HARSH | A | P800AKU |
| E31-N015A<br>2NCS*FT69X | FLOW TRANSMITTER     |         | SC289155 | HARSH | A | P800AKZ |





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|-------------------------|---------------------|--|----------|---------|---------|
| E31-N015B<br>2WCS*FT69Y | FLOW TRANSHITTER    |  | SC289155 | HARSH A | P800ALA |
| E31-N018A<br>2RHS*TE49A | TEMPERATURE ELEMENT |  | ABN17504 | HARSH A | P800ALF |
| E31-N018B<br>2RHS*TE49B | TEMPERATURE ELEMENT |  | ABN17504 | HARSH A | P800ALG |
| E31-N018C<br>2RHS*TE49C | TEMPERATURE ELEMENT |  | ABS17509 | HARSH A | P800ALH |
| E31-N018D<br>2RHS*TE49D | TEMPERATURE ELEMENT |  | ABS17509 | HARSH A | P800ALI |
| E31-N024A<br>2ICS*TE10A | TEMPERATURE ELEMENT |  | SC196118 | HARSH A | P800ALJ |
| E31-N024B<br>2ICS*TE10B | TEMPERATURE ELEMENT |  | SC196118 | HARSH A | P800ALK |
| E31-N029A<br>2HSS*TE48A | TEMPERATURE ELEMENT |  | HST26147 | HARSH A | P800ALX |
| E31-N029B<br>2HSS*TE48B | TEMPERATURE ELEMENT |  | HST26147 | HARSH A | P800ALY |
| E31-N029C<br>2HSS*TE48C | TEMPERATURE ELEMENT |  | HST26147 | HARSH A | P800ALZ |
| E31-N029D<br>2HSS*TE48D | TEMPERATURE ELEMENT |  | HST26147 | HARSH A | P800AHA |
| E31-N030A<br>2HSS*TE49A | TEMPERATURE ELEMENT |  | HST26146 | HARSH A | P800AHB |
| E31-N030B<br>2HSS*TE49B | TEMPERATURE ELEMENT |  | HST26146 | HARSH A | P800AHC |
| E31-N030C<br>2HSS*TE49C | TEMPERATURE ELEMENT |  | HST26146 | HARSH A | P800AND |
| E31-N030D<br>2HSS*TE49D | TEMPERATURE ELEMENT |  | HST26146 | HARSH A | P800AHE |



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SORTED BY MARK NUMBER

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*****
MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP  EQUALST  QUAL REF
SHEC ID.
*****
```

|                         |                     |  |          |       |   |         |
|-------------------------|---------------------|--|----------|-------|---|---------|
| E31-N031A<br>2HSS*TE50A | TEMPERATURE ELEMENT |  | HST26146 | HARSH | A | P800AHF |
| E31-N031B<br>2HSS*TE50B | TEMPERATURE ELEMENT |  | HST26146 | HARSH | A | P800AHG |
| E31-N031C<br>2HSS*TE50C | TEMPERATURE ELEMENT |  | HST26146 | HARSH | A | P800AHH |
| E31-N031D<br>2HSS*TE50D | TEMPERATURE ELEMENT |  | HST26146 | HARSH | A | P800AHI |
| E31-N035A<br>2HCS*FT68X | FLOW TRANSMITTER    |  | SC289155 | HARSH | A | P800AHJ |
| E31-N035B<br>2HCS*FT68Y | FLOW TRANSMITTER    |  | SC289155 | HARSH | A | P800AHK |
| E31-N036A<br>2HCS*FT67X | FLOW TRANSMITTER    |  | SC215122 | HARSH | A | P800AHL |
| E31-N036B<br>2HCS*FT67Y | FLOW TRANSMITTER    |  | SC215122 | HARSH | A | P800APO |
| E31-N040A<br>2HSS*TE69A | TEMPERATURE ELEMENT |  | HST28948 | HARSH | A | P800AHN |
| E31-N040B<br>2HSS*TE69B | TEMPERATURE ELEMENT |  | HST28948 | HARSH | A | P800AHO |
| E31-N040C<br>2HSS*TE69C | TEMPERATURE ELEMENT |  | HST28948 | HARSH | A | P800AHP |
| E31-N040D<br>2HSS*TE69D | TEMPERATURE ELEMENT |  | HST28948 | HARSH | A | P800AHQ |
| E31-N041A<br>2HSS*TE70A | TEMPERATURE ELEMENT |  | HST28949 | HARSH | A | P800AHR |
| E31-N041B<br>2HSS*TE70B | TEMPERATURE ELEMENT |  | HST28949 | HARSH | A | P800AHS |
| E31-N041C<br>2HSS*TE70C | TEMPERATURE ELEMENT |  | HST28949 | HARSH | A | P800AHT |



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*****
MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP EQUALST  QUAL REF
SPEC ID.
*****
```

|                          |                      |  |          |         |         |
|--------------------------|----------------------|--|----------|---------|---------|
| E31-N041D<br>2HSS*TE70D  | TEMPERATURE ELEMENT  |  | HST28949 | HARSH A | P800AHU |
| E31-N042A<br>2HSS*TE71A  | TEMPERATURE ELEMENT  |  | HST28949 | HARSH A | P800AHV |
| E31-N042B<br>2HSS*TE71B  | TEMPERATURE ELEMENT  |  | HST28949 | HARSH A | P800AHW |
| E31-N042C<br>2HSS*TE71C  | TEMPERATURE ELEMENT  |  | HST28949 | HARSH A | P800AHX |
| E31-N042D<br>2HSS*TE71D  | TEMPERATURE ELEMENT  |  | HST28949 | HARSH A | P800AHY |
| E31-N083A<br>2ICS*PDT5A  | DIFF PRESSURE TRANSH |  | SC175105 | HARSH A | P800ANX |
| E31-N083B<br>2ICS*PDT5B  | DIFF PRESSURE TRANS  |  | SC175105 | HARSH A | P800ANY |
| E31-N084A<br>2ICS*PDT167 | DIFF PRESSURE TRANSH |  | SC175105 | HARSH A | P800ANZ |
| E31-N084B<br>2ICS*PDT168 | DIFF PRESSURE TRANSH |  | SC175105 | HARSH A | P800AOA |
| E31-N085A<br>2ICS*PT167Y | PRESSURE TRANSHITTER |  | SC175105 | HARSH A | P800AOB |
| E31-N085B<br>2ICS*PT168Y | PRESSURE TRANSHITTER |  | SC175105 | HARSH A | P800AOC |
| E31-N085E<br>2ICS*PT167X | PRESSURE TRANSHITTER |  | SC175105 | HARSH A | P800AOD |
| E31-N085F<br>2ICS*PT168X | PRESSURE TRANSHITTER |  | SC175105 | HARSH A | P800AOE |
| E31-N086A<br>2HSS*FT12A  | FLOW TRANSHITTER     |  | SC215122 | HARSH A | P800AOF |
| E31-N086B<br>2HSS*FT15A  | FLOW TRANSHITTER     |  | SC215122 | HARSH A | P800AOG |



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SORTED BY MARK NUMBER

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*****
MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP  EQUALST  QUAL REF
SPEC ID.
*****
```

|                         |                      |  |          |         |  |         |
|-------------------------|----------------------|--|----------|---------|--|---------|
| E31-N086C<br>2HSS*FT14A | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0H |
| E31-N086D<br>2HSS*FT13A | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0I |
| E31-N087A<br>2HSS*FT12B | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0J |
| E31-N087B<br>2HSS*FT15B | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0K |
| E31-N087C<br>2HSS*FT14B | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0L |
| E31-N087D<br>2HSS*FT13B | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0M |
| E31-N088A<br>2HSS*FT12C | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0N |
| E31-N088B<br>2HSS*FT15C | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0P |
| E31-N088C<br>2HSS*FT14C | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0Q |
| E31-N088D<br>2HSS*FT13C | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0R |
| E31-N089A<br>2HSS*FT12D | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0S |
| E31-N089B<br>2HSS*FT15D | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0T |
| E31-N089C<br>2HSS*FT14D | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0U |
| E31-N089D<br>2HSS*FT13D | FLOW TRANSMITTER     |  | SC215122 | HARSH A |  | P800A0V |
| E31-N092<br>2DER-PT134  | PRESSURE TRANSMITTER |  | SC261145 | HARSH A |  | P800A0H |





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SORTED BY MARK NUMBER

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*****
MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP  EQUALST  QUAL REF
SPEC ID.
*****
```

|                        |                      |         |          |       |   |         |
|------------------------|----------------------|---------|----------|-------|---|---------|
| E51-C002<br>2ICS*TL    | RCIC TURBINE         |         | SC175106 | HARSH | A | P800A0X |
| E51-N003<br>2ICS*FT101 | FLOW TRANSHITTER     |         | SC175105 | HARSH | A | P800A0Y |
| E51-N007<br>2ICS*PT103 | PRESSURE TRANSHITTER |         | SC175105 | HARSH | A | P800A0Z |
| E51-N010<br>2ICS*LS132 | LEVEL SWITCH         |         | SC175106 | HARSH | A | P800APA |
| E51-N035A<br>2ICS*LT3A | LEVEL TRANSHITTER    |         | RB240218 | HARSH | A | P800APB |
| E51-N035E<br>2ICS*LT3C | LEVEL TRANSHITTER    |         | RB240218 | HARSH | A | P800APC |
| E51-N037<br>2ICS*LS206 | LEVEL SWITCH         | RG 1.97 | SC175106 | HARSH | A | P800APD |
| E51-N050<br>2ICS*PT104 | PRESSURE TRANSHITTER |         | SC175105 | HARSH | A | P800APE |
| E51-N051<br>2ICS*FT102 | FLOW TRANSHITTER     | RG 1.97 | SC175105 | HARSH | A | P800APF |
| E51-N052<br>2ICS*PT106 | PRESSURE TRANSHITTER |         | SC175105 | HARSH | A | P800APG |
| E51-N053<br>2ICS*PT105 | PRESSURE TRANSHITTER |         | SC175105 | HARSH | A | P800APH |
| E51-N055A<br>2ICS*PT2A | PRESSURE TRANSHITTER |         | SC175105 | HARSH | A | P800API |
| E51-N055B<br>2ICS*PT2B | PRESSURE TRANSHITTER |         | SC175105 | HARSH | A | P800APJ |
| E51-N055E<br>2ICS*PT2C | PRESSURE TRANSHITTER |         | SC175105 | HARSH | A | P800APK |
| E51-N055F<br>2ICS*PT2D | PRESSURE TRANSHITTER |         | SC175105 | HARSH | A | P800APL |



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*****
MARK NO      EQUIPMENT DESCRIPTION      REMARKS      ENV. ZONE  ENVTYP EQUALST  QUAL REF
  SNEC ID.
*****
E51-N056A    PRESSURE TRANSMITTER              SC175105   HARSH  A      P800APH
  2ICS*PT1A
E51-N056E    PRESSURE TRANSMITTER              SC175105   HARSH  A      P800APN
  2ICS*PT1B
```



APPENDIX B (BOP)

VOLUME 1



ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                 |         |
|--------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|---------|
|                                | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS |
|                                |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                 |         |
| EQUIP NO.: 2CMS*PNL66A         |                                            |                    |                    |                    |           |                |                 |         |
| SPEC NO.: C001C                | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES             |         |
| SYSTEM: CONTAINMENT            | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| ATMOSPHERE MONITORING          | NORMAL                                     | 104/89             | 104                | 1                  | 2         | TEST-SIM       | NA              | NOTE 2  |
|                                | ABNORMAL                                   | 89                 | 104                | 1                  | 2         | TEST-SIM       | NA              |         |
| TYPE: (DESCRIPTION)            | ACCIDENT                                   | NA                 | 150                | 1                  | 2         | TEST-SIM       | YES             | NOTE 3  |
| HYDROGEN ANALYZER              | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
|                                | NORMAL                                     | -.25"W.G.          | 29"Hg              | 1                  | 2         | TEST-SIM       | NA              |         |
|                                | ABNORMAL                                   | -.25"W.G.          | 29"Hg              | 1                  | 2         | TEST-SIM       | NA              |         |
| MANUFACTURER: COMSIP           | ACCIDENT                                   | NA                 | 29"Hg              | 1                  | 2         | TEST-SIM       | YES             | NOTE 3  |
|                                | RH (%) :                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| MODEL NO.: K-IV                | NORMAL                                     | 50                 | 50                 | 1                  | 2         | TEST-SIM       | NA              |         |
|                                | ABNORMAL                                   | 50                 | 50                 | 1                  | 2         | TEST-SIM       | NA              |         |
| SAFETY FUNCTION: - - -         | ACCIDENT                                   | NA                 | 90                 | 1                  | 2         | TEST-SIM       | NA              |         |
| MONITOR HYDROGEN AND OXYGEN    | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| LEVELS AFTER LOCA              | NORM GAMMA                                 | 1.8E3              |                    | 1                  |           |                | NA              |         |
|                                | ACC GAMMA                                  | 2.2E4              | 1E6                | 1                  | 2         | TEST-SIM       | YES             |         |
| OP. CODE: B                    | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA              |         |
|                                | ACC BETA                                   | NA                 |                    | 1                  |           |                | NA              |         |
|                                | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA              |         |
|                                | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA              |         |
| ACCURACY - -                   | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA              |         |
| SPEC: +/-5.0% RANGE            |                                            |                    |                    |                    |           |                |                 |         |
| DEMO: +/-3.3% RANGE            |                                            |                    |                    |                    |           |                |                 |         |
| ZONE NO.: ABN24033             |                                            |                    |                    |                    |           |                |                 |         |
| SUBMERGENCE: NA                |                                            |                    |                    |                    |           |                |                 |         |
| SPRAY: NA                      |                                            |                    |                    |                    |           |                |                 |         |
| EQUIPMENT NOT SUBJECT TO       |                                            |                    |                    |                    |           |                |                 |         |
| SUBMERGENCE OR SPRAY           |                                            |                    |                    |                    |           |                |                 |         |
| DOCUMENTATION ACCEPTABILITY:   |                                            |                    |                    |                    |           |                |                 |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                                            |                    |                    |                    |           |                |                 |         |
|                                |                                            |                    |                    |                    |           |                |                 |         |
|                                |                                            |                    |                    |                    |           |                |                 |         |
| MAINT/SURVEILL - - -           |                                            |                    |                    |                    |           |                |                 |         |
| REFERENCE: 2                   |                                            |                    |                    |                    |           |                |                 |         |
|                                |                                            |                    |                    |                    |           |                |                 |         |
| QUALIFIED LIFE - - -           |                                            |                    |                    |                    |           |                |                 |         |
| (YEARS): 5                     |                                            |                    |                    |                    |           |                |                 |         |
| REFERENCE: 2                   |                                            |                    |                    |                    |           |                |                 |         |
|                                |                                            |                    |                    |                    |           |                |                 |         |
|                                |                                            |                    |                    |                    |           |                |                 |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CMS*PNL66B          | OP. TIME:                                  | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.: C001C                 | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: CONTAINMENT             | NORMAL                                     | 104/88             | 104                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| ATMOSPHERE MONITORING           | ABNORMAL                                   | 88                 | 104                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)             | ACCIDENT                                   | NA                 | 150                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
| HYDROGEN ANALYZER               | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                 | NORMAL                                     | -.25"W.G.          | 29"Hg              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | -.25"W.G.          | 29"Hg              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: COMSIP            | ACCIDENT                                   | NA                 | 29"Hg              | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                 | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.: K-IV                 | NORMAL                                     | 50                 | 50                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | 50                 | 50                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -          | ACCIDENT                                   | NA                 | 90                 | 1                  | 2         | TEST-SIM       | NA             |         |
| MONITOR HYDROGEN AND OXYGEN     | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| LEVELS AFTER LOCA               | NORM GAMMA                                 | 1.8E3              |                    | 1                  |           |                | NA             |         |
|                                 | ACC GAMMA                                  | 2.2E4              | 1E6                | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: B                     | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | ACC BETA                                   | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/-5.0% RANGE             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/-3.3% RANGE             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: ABS24036              |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                 |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA                       |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 5                      |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
 2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
 3. TEMPERATURE AND PRESSURE VALUES SHOWN ARE LOCA AMBIENT CONDITIONS AT THE SAMPLE PUMP LOCATION; TEMPERATURE AND PRESSURE VALUES SHOWN ON TEST PROFILES ARE LOCA AMBIENT CONDITIONS AT SAMPLE WITHDRAW POINT.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                              |  | PARAMETER                                                                                                                                                                                            | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE                                                                                                                                                                                                                    |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                      |                 |                 | SPECIFIED                                                                                                                                                                                                                             | QUALIFIED |             |             |                                                                                                                                                                                                                                                                                                                                                            |
| EQUIP NO.:      2CMS*PNL73A<br>SPEC NO.:       C001C<br>SYSTEM:<br>CONTAINMENT ATMOSPHERE<br>MONITORING<br>TYPE: (DESCRIPTION)<br>HYDROGEN ANALYZER<br><br>MANUFACTURER: COMSIP<br><br>MODEL NO.:     K-IV<br><br>SAFETY FUNCTION: - - -<br>MONITOR HYDROGEN AND OXYGEN LEVELS AFTER LOCA<br><br>OP. CODE:       B<br><br><br><br>ACCURACY - -<br>SPEC: +/-5.0% RANGE[R]<br>DEMO: +/-3.3% RANGE[R] |  | =====                                                                                                                                                                                                | =====           | =====           | =====                                                                                                                                                                                                                                 | =====     | =====       | =====       |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | I OP.TIME:                                                                                                                                                                                           | 100 DAYS        | >100 DAYS       | 3                                                                                                                                                                                                                                     | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | I TEMP (F):                                                                                                                                                                                          | - - - -         | - - - -         | - - - -                                                                                                                                                                                                                               | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | NORMAL                                                                                                                                                                                               | 104/89          | 104             | 1                                                                                                                                                                                                                                     | 2         | TEST-SIM    | NA          | NOTE 2                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | ABNORMAL                                                                                                                                                                                             | 89              | 104             | 1                                                                                                                                                                                                                                     | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | ACCIDENT                                                                                                                                                                                             | NA              | 150             | 1                                                                                                                                                                                                                                     | 2         | TEST-SIM    | YES         | NOTE 3                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | I PRESS(PSIG)                                                                                                                                                                                        | - - - -         | - - - -         | - - - -                                                                                                                                                                                                                               | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | NORMAL                                                                                                                                                                                               | -.25"WG         | 29"HG           | 1                                                                                                                                                                                                                                     | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | ABNORMAL                                                                                                                                                                                             | -.25"WG         | 29"HG           | 1                                                                                                                                                                                                                                     | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | ACCIDENT                                                                                                                                                                                             | NA              | 29"HG           | 1                                                                                                                                                                                                                                     | 2         | TEST-SIM    | YES         | NOTE 3                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | I RH (%):                                                                                                                                                                                            | - - - -         | - - - -         | - - - -                                                                                                                                                                                                                               | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | NORMAL                                                                                                                                                                                               | 50              | 50              | 1                                                                                                                                                                                                                                     | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | ABNORMAL                                                                                                                                                                                             | 50              | 50              | 1                                                                                                                                                                                                                                     | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | ACCIDENT                                                                                                                                                                                             | NA              | 90              | 1                                                                                                                                                                                                                                     | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | I RADIATION:                                                                                                                                                                                         | - - - -         | - - - -         | - - - -                                                                                                                                                                                                                               | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | NORM GAMMA                                                                                                                                                                                           | 1.8E3           |                 | 1                                                                                                                                                                                                                                     |           |             | NA          |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | ACC GAMMA                                                                                                                                                                                            | 2.2E4           | 1E6 [R1]        | 1                                                                                                                                                                                                                                     | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | NORM BETA                                                                                                                                                                                            | NA              |                 | 1                                                                                                                                                                                                                                     |           |             | NA          |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | ACC BETA                                                                                                                                                                                             | NA              |                 | 1                                                                                                                                                                                                                                     |           |             | NA          |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | NEUTRON                                                                                                                                                                                              | NA              |                 | 1                                                                                                                                                                                                                                     |           |             | NA          |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | I SPRAY                                                                                                                                                                                              | NA              | NA              | NA                                                                                                                                                                                                                                    | NA        | NA          | NA          |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | I SUBMERGENCE                                                                                                                                                                                        | NA              | NA              | NA                                                                                                                                                                                                                                    | NA        | NA          | NA          |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | =====                                                                                                                                                                                                | =====           | =====           | =====                                                                                                                                                                                                                                 | =====     | =====       | =====       |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | I ZONE NO.:      ABN24033<br>SUBMERGENCE:    NA<br>SPRAY:           NA<br><br>EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY<br><br>DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                 |                 | DOCUMENT REFERENCE:                                                                                                                                                                                                                   |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED.<br>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.<br>3.TEMPERATURE AND PRESSURE VALUES SHOWN ARE LOCA AMBIENT CONDITIONS AT THE SAMPLE PUMP LOCATION; TEMPERATURE AND PRESSURE VALUES SHOWN ON TEST PROFILES ARE LOCA AMBIENT CONDITIONS AT SAMPLE WITHDRAW POINT. |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  | I MAINT/SURVEILL - - -<br>REFERENCE: 2<br><br>I QUALIFIED LIFE - - -<br>(YEARS): 5<br>REFERENCE: 2                                                                                                   |                 |                 | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R1]<br>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.155-5000D<br>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 33-2-C11 |           |             |             |                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                      |                 |                 | [R1] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                                                                                         |           |             |             |                                                                                                                                                                                                                                                                                                                                                            |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------|-------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |             | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |             |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2CMS*PNL73B | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.:                      | C001C       | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                        |             | NORMAL                                     | 104/88             | 104                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| CONTAINMENT ATMOSPHERE         |             | ABNORMAL                                   | 88                 | 104                | 1                  | 2         | TEST-SIM       | NA             |         |
| MONITORING                     |             | ACCIDENT                                   | NA                 | 150                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
| TYPE: (DESCRIPTION)            |             | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| HYDROGEN ANALYZER              |             | NORMAL                                     | -.25"WG            | 29"HG              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |             | ABNORMAL                                   | -.25"WG            | 29"HG              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: COMSIP           |             | ACCIDENT                                   | NA                 | 29"HG              | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                |             | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                     | K-IV        | NORMAL                                     | 50                 | 50                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |             | ABNORMAL                                   | 50                 | 50                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -         |             | ACCIDENT                                   | NA                 | 90                 | 1                  | 2         | TEST-SIM       | NA             |         |
| MONITOR HYDROGEN AND OXYGEN    |             | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| LEVELS AFTER LOCA              |             | NORM GAMMA                                 | 1.8E3              |                    | 1                  |           |                | NA             |         |
|                                |             | ACC GAMMA                                  | 2.2E4              | 1E6 [R1]           | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                      | B           | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                |             | ACC BETA                                   | NA                 |                    | 1                  |           |                | NA             |         |
|                                |             | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                |             | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                   |             | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/-5.0% RANGE[R1]        |             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/-3.3% RANGE[R1]        |             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      |             |                                            |                    |                    |                    |           |                |                |         |
| ABS24036                       |             |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                |             |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA                      |             |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |             |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY           |             |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |             |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |             |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |             |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |             |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |             |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 5                     |             |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |             |                                            |                    |                    |                    |           |                |                |         |
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## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[CR2] INDICATES CHANGES MADE IN THIS REVISION.





QUAL REF # C021LAB\_\_\_\_\_REV 2

08-Mar-86

| EQUIPMENT DESCRIPTION                                       |                                      | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                              |
|-------------------------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|------------------------------------------------------------------------------|
|                                                             |                                      | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                      |
|                                                             |                                      |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                              |
| EQUIP NO.:                                                  | 2DFR*LS3B                            | OP.TIME:                                                                                     | 100DAYS[R2]        | >100DAYS[R2]       | 3                  | 2         | AN + DATA      | YES            |                                                                              |
| SPEC NO.:                                                   | C021L                                | TEMP (F):                                                                                    |                    |                    |                    |           |                |                |                                                                              |
| SYSTEM:                                                     | REACTOR BUILDING FLOOR DRAINS SYSTEM | NORMAL                                                                                       | 120/85 [R2]        | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1                                                                       |
|                                                             |                                      | ABNORMAL                                                                                     | 94 [R2]            | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                       |
| TYPE: (DESCRIPTION)                                         |                                      | ACCIDENT                                                                                     | 175                | 281                | 1                  | 2         | TEST-SIM       | YES            |                                                                              |
| LEVEL SWITCH                                                |                                      | PRESS(PSIG)                                                                                  | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1                                                                       |
|                                                             |                                      | NORMAL                                                                                       | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                              |
|                                                             |                                      | ABNORMAL                                                                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                              |
| MANUFACTURER:                                               | MAGNETROL                            | ACCIDENT                                                                                     | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |                                                                              |
|                                                             |                                      | RH (%):                                                                                      | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1                                                                       |
| MODEL NO.:                                                  | FLS-MPX-S1MD4                        | NORMAL                                                                                       | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                              |
|                                                             |                                      | ABNORMAL                                                                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                              |
| SAFETY FUNCTION:                                            | - - -                                | ACCIDENT                                                                                     | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                              |
| 2RHS*E1B CUBICLE FLOOD ALM                                  |                                      | RADIATION:                                                                                   | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1                                                                       |
|                                                             |                                      | NORM GAMMA                                                                                   | 1.1E6              |                    | 1                  |           |                | NA             |                                                                              |
|                                                             |                                      | ACC GAMMA                                                                                    | 3.6E7              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |                                                                              |
| OP. CODE:                                                   | A                                    | NORM BETA                                                                                    | NA                 |                    | 1                  |           |                | NA             |                                                                              |
|                                                             |                                      | ACC BETA                                                                                     | 6.1E6              |                    | 1                  |           |                | YES            |                                                                              |
|                                                             |                                      | NEUTRON                                                                                      | NA                 |                    | 1                  |           |                | NA             |                                                                              |
|                                                             |                                      | SPRAY                                                                                        | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |                                                                              |
| ACCURACY - -                                                |                                      | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                              |
| SPEC:                                                       | NA                                   |                                                                                              |                    |                    |                    |           |                |                |                                                                              |
| DEMO:                                                       | NA                                   |                                                                                              |                    |                    |                    |           |                |                |                                                                              |
| ZONE NO.:                                                   | ABS17510                             |                                                                                              |                    |                    |                    |           |                |                |                                                                              |
| SUBMERGENCE:                                                | NA                                   | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                |                                                                              |
| SPRAY:                                                      | NA                                   | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED. |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               |                                      | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT. SDDF # IEEE 07.124-5000F [R2]                  |                    |                    |                    |           |                |                | 2.NORMAL SPECIFIED TEMP ARE SHOWN AS MAX DESIGN/AVERAGE.                     |
|                                                             |                                      | 3. POST-ACCIDENT OPERABILITY PERIOD: FILE NO. 23-6-C1                                        |                    |                    |                    |           |                |                |                                                                              |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                                      | 4. CALCULATION NO. 12177-EQS-39                                                              |                    |                    |                    |           |                |                |                                                                              |
| MAINT/SURVEILL - - -                                        |                                      |                                                                                              |                    |                    |                    |           |                |                |                                                                              |
| REFERENCE: 2                                                |                                      |                                                                                              |                    |                    |                    |           |                |                |                                                                              |
| QUALIFIED LIFE - - -                                        |                                      |                                                                                              |                    |                    |                    |           |                |                |                                                                              |
| (YEARS): 40                                                 |                                      |                                                                                              |                    |                    |                    |           |                |                |                                                                              |
| REFERENCE: 2,4                                              |                                      |                                                                                              |                    |                    |                    |           |                |                |                                                                              |
|                                                             |                                      | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                              |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          |                                      | PARAMETER                                                                                    | SPECIFIED VALUE   | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                         |
|----------------------------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------|-------------------|-----------------|--------------------|-----------|-------------|-------------|---------------------------------------------------------------------------------|
|                                                                |                                      |                                                                                              |                   |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                 |
| EQUIP NO.:                                                     | 2DFR*LS143                           |                                                                                              |                   |                 |                    |           |             |             |                                                                                 |
| SPEC NO.:                                                      | C021L                                | OP.TIME:                                                                                     | 100DAYS[R2]       | >100DAYS[R2]    | 3                  | 2         | AN + DATA   | YES         |                                                                                 |
| SYSTEM:                                                        | REACTOR BUILDING FLOOR DRAINS SYSTEM | TEMP (F):                                                                                    | NORMAL 120/85[R2] | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1<br>NOTE 2                                                                |
|                                                                |                                      |                                                                                              | ABNORMAL 97       | 120             | 1                  | 2         | TEST-SIM    | NA          |                                                                                 |
| TYPE: (DESCRIPTION)                                            | LEVEL SWITCH                         | ACCIDENT:                                                                                    | 175               | 281             | 1                  | 2         | TEST-SIM    | YES         |                                                                                 |
|                                                                |                                      | PRESS(PSIG)                                                                                  | - - - - -         | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                          |
|                                                                |                                      |                                                                                              | NORMAL -0.25"WG   | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |                                                                                 |
|                                                                |                                      |                                                                                              | ABNORMAL -0.25"WG | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |                                                                                 |
| MANUFACTURER:                                                  | MAGNETROL                            | ACCIDENT:                                                                                    | 2.8               | 18              | 1                  | 2         | TEST-SIM    | YES         |                                                                                 |
|                                                                |                                      | RH (%):                                                                                      | - - - - -         | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                          |
| MODEL NO.:                                                     | FLS-MPX-S1MD4                        |                                                                                              | NORMAL 50         | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                 |
|                                                                |                                      |                                                                                              | ABNORMAL 50       | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                 |
| SAFETY FUNCTION:                                               | - - -                                | ACCIDENT:                                                                                    | 100               | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                 |
| RHS B PMP RM FLD WTR LVL ALM                                   |                                      | RADIATION:                                                                                   | - - - - -         | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                          |
|                                                                |                                      |                                                                                              | NORM GAMMA 8.4E5  |                 | 1                  |           |             | NA          |                                                                                 |
|                                                                |                                      |                                                                                              | ACC GAMMA 4.6E7   | 2.2E8           | 1                  | 2         | TEST-SIM    | YES         |                                                                                 |
| OP. CODE:                                                      | A                                    |                                                                                              | NORM BETA NA      |                 | 1                  |           |             | NA          |                                                                                 |
|                                                                |                                      |                                                                                              | ACC BETA 6.1E6    |                 | 1                  |           |             | YES         |                                                                                 |
|                                                                |                                      |                                                                                              | NEUTRON NA        |                 | 1                  |           |             | NA          |                                                                                 |
|                                                                |                                      | SPRAY:                                                                                       | NA                | YES             | NA                 | 2         | TEST-SIM    | NA          |                                                                                 |
| ACCURACY - -                                                   |                                      | SUBMERGENCE:                                                                                 | NA                | NA              | NA                 | NA        | NA          | NA          |                                                                                 |
| SPEC:                                                          | NA                                   |                                                                                              |                   |                 |                    |           |             |             |                                                                                 |
| DEMO:                                                          | NA                                   |                                                                                              |                   |                 |                    |           |             |             |                                                                                 |
| ZONE NO.:                                                      | ABS17509                             |                                                                                              |                   |                 |                    |           |             |             |                                                                                 |
| SUBMERGENCE:                                                   | NA                                   | DOCUMENT REFERENCE:                                                                          |                   |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED. |
| SPRAY:                                                         | NA                                   | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                   |                 |                    |           |             |             | 2.NORMAL SPECIFIED TEMP ARE SHOWN AS MAX DESIGN/AVERAGE.                        |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                  |                                      | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.124-5000F [R2]                  |                   |                 |                    |           |             |             |                                                                                 |
|                                                                |                                      | 3. POST-ACCIDENT OPERABILITY PERIOD: FILE NO. 23-6-C2                                        |                   |                 |                    |           |             |             |                                                                                 |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                      | 4. CALCULATION NO. 12177-EQS-39                                                              |                   |                 |                    |           |             |             |                                                                                 |
|                                                                |                                      |                                                                                              |                   |                 |                    |           |             |             |                                                                                 |
|                                                                |                                      |                                                                                              |                   |                 |                    |           |             |             |                                                                                 |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |                                      |                                                                                              |                   |                 |                    |           |             |             |                                                                                 |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2,4          |                                      |                                                                                              |                   |                 |                    |           |             |             |                                                                                 |
|                                                                |                                      | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                   |                 |                    |           |             |             |                                                                                 |



### ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                 |                 |                    |           |             |             |         |
|--------------------------------|------------------|----------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |                  | PARAMETER                                                                                    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |                  |                                                                                              |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                     | 2DFR*LS144       | OP.TIME:                                                                                     | 100DAYS[R2]     | >100DAYS[R2]    | 3                  | 2         | AN + DATA   | YES         |         |
| SPEC NO.:                      | C021L            | TEMP (F):                                                                                    |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                        | REACTOR BUILDING | NORMAL                                                                                       | 120/85 [R2]     | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                | FLOOR DRAINS     | ABNORMAL                                                                                     | 97              | 120             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                | SYSTEM           | ACCIDENT                                                                                     | 175             | 281             | 1                  | 2         | TEST-SIM    | YES         |         |
| TYPE: (DESCRIPTION)            |                  | PRESS(PSIG)                                                                                  |                 |                 |                    |           |             |             | NOTE 1  |
| LEVEL SWITCH                   |                  | NORMAL                                                                                       | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |                  | ABNORMAL                                                                                     | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                  | MAGNETROL        | ACCIDENT                                                                                     | 2.8             | 18              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                |                  | RH (%):                                                                                      |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                     | FLS-MPX-SIMD4    | NORMAL                                                                                       | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |                  | ABNORMAL                                                                                     | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:               | - - -            | ACCIDENT                                                                                     | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| RHS C PMP RM FLD WTR LVL ALM   |                  | RADIATION:                                                                                   |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                  | NORM GAMMA                                                                                   | 3.3E5           |                 | 1                  |           |             | NA          |         |
|                                |                  | ACC GAMMA                                                                                    | 4.1E7           | 2.2E8           | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                      | A                | NORM BETA                                                                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                |                  | ACC BETA                                                                                     | 6.1E6           |                 | 1                  |           |             | YES         |         |
|                                |                  | NEUTRON                                                                                      | NA              |                 | 1                  |           |             | NA          |         |
|                                |                  | SPRAY                                                                                        | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY - -                   |                  | SUBMERGENCE                                                                                  | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                          | NA               |                                                                                              |                 |                 |                    |           |             |             |         |
| DEMO:                          | NA               |                                                                                              |                 |                 |                    |           |             |             |         |
| ZONE NO.:                      | ABS17508         |                                                                                              |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                   | NA               |                                                                                              |                 |                 |                    |           |             |             |         |
| SPRAY:                         | NA               |                                                                                              |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                                                                              |                 |                 |                    |           |             |             |         |
| SUBMERGENCE OR SPRAY           |                  |                                                                                              |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                                                                              |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0589,CAT I |                  |                                                                                              |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |                  |                                                                                              |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |                  |                                                                                              |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |                  |                                                                                              |                 |                 |                    |           |             |             |         |
| (YEARS): 40                    |                  |                                                                                              |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                 |                  |                                                                                              |                 |                 |                    |           |             |             |         |
|                                |                  | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                 |                 |                 |                    |           |             |             |         |
|                                |                  | 2.NORMAL SPECIFIED TEMP ARE SHOWN AS MAX DESIGN/AVERAGE.                                     |                 |                 |                    |           |             |             |         |
|                                |                  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                 |                 |                    |           |             |             |         |
|                                |                  | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.124-5000F [R2]                  |                 |                 |                    |           |             |             |         |
|                                |                  | 3. POST-ACCIDENT OPERABILITY PERIOD: FILE NO. 23-6-C2                                        |                 |                 |                    |           |             |             |         |
|                                |                  | 4. CALCULATION NO. 12177-EQS-39                                                              |                 |                 |                    |           |             |             |         |
|                                |                  | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                 |                 |                    |           |             |             |         |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                  | PARAMETER                                     | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|--------------------------------|------------------|-----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |                  |                                               |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2DFR*LS145       | OP.TIME:                                      | 100DAYS[R2]        | >100DAYS[R2]       | 3                  | 2         | AN + DATA      | YES            |         |
| SPEC NO.:                      | C021L            | TEMP (F):                                     |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM:                        | REACTOR BUILDING | NORMAL                                        | 120/85 [R2]        | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                | FLOOR DRAINS     | ABNORMAL                                      | 86                 | 120                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                | SYSTEM           | ACCIDENT                                      | 120 [R2]           | 281                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
| TYPE: (DESCRIPTION)            |                  | PRESS(PSIG)                                   |                    |                    |                    |           |                |                | NOTE 1  |
| LEVEL SWITCH                   |                  | NORMAL                                        | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |                  | ABNORMAL                                      | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                  | MAGNETROL        | ACCIDENT                                      | -0.25"WG           | 18                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                |                  | RH (%)                                        |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                     | FLS-MPX-S1MD4    | NORMAL                                        | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |                  | ABNORMAL                                      | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:               | - - -            | ACCIDENT                                      | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
| ICS PMP RM FLOOD WATER         |                  | RADIATION:                                    |                    |                    |                    |           |                |                | NOTE 1  |
| LEVEL ALARM                    |                  | NORM GAMMA                                    | 2.4E4              |                    | 1                  |           |                | NA             |         |
|                                |                  | ACC GAMMA                                     | 2E7                | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                      | A                | NORM BETA                                     | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                  | ACC BETA                                      | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                |                  | NEUTRON                                       | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                  | SPRAY                                         | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                   |                  | SUBMERGENCE                                   | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                          | NA               |                                               |                    |                    |                    |           |                |                |         |
| DEMO:                          | NA               |                                               |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | SC175106         |                                               |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA               |                                               |                    |                    |                    |           |                |                |         |
| SPRAY:                         | NA               |                                               |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                               |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY           |                  |                                               |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                               |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                  |                                               |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                  |                                               |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                  |                                               |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                  |                                               |                    |                    |                    |           |                |                |         |
| (YEARS): 40                    |                  |                                               |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                 |                  |                                               |                    |                    |                    |           |                |                |         |
|                                |                  | [R2] INDICATES CHANGES MADE IN THIS REVISION. |                    |                    |                    |           |                |                |         |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



08-Mar-86

QUAL REF #\_C021LAH REV 2

| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------|------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |                  | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                  |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2DFR*LS148       | OP.TIME:                                   | 100DAYS[R2]        | >100DAYS[R2]       | 3                  | 2         | AN + DATA      | YES            |         |
| SPEC NO.:                      | C021L            | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                        | REACTOR BUILDING | NORMAL                                     | 120/85 [R2]        | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                | FLOOR DRAINS     | ABNORMAL                                   | 99                 | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                | SYSTEM           | ACCIDENT                                   | 175                | 281                | 1                  | 2         | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)            |                  | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
| LEVEL SWITCH                   |                  | NORMAL                                     | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |                  | ABNORMAL                                   | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                  | MAGNETROL        | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                |                  | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                     | FLS-MPX-S1MD4    | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |                  | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:               | - - -            | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| RHS A PMP RM FLD WTR LVL ALM   |                  | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                |                  | NORM GAMMA                                 | 8.4E5              |                    | 1                  |           |                | NA             |         |
|                                |                  | ACC GAMMA                                  | 6.3E7              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                      | A                | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                  | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                |                  | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                  | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                   |                  | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                          | NA               |                                            |                    |                    |                    |           |                |                |         |
| DEMO:                          | NA               |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | ABN17504         |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA               |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                         | NA               |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY           |                  |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                  |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                  |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                  |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                    |                  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                 |                  |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.124-5000F [R2]
- POST-ACCIDENT OPERABILITY PERIOD: FILE NO. 23-6-C4
- CALCULATION NO. 12177-EQS-39

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL SPECIFIED TEMP ARE SHOWN AS MAX DESIGN/AVERAGE.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



QUAL REF # C021LAI REV 2

08-Mar-86

| EQUIPMENT DESCRIPTION                                          |                                | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                      |                    |                    |                    |           |                                                                                                                                                                                              |                |         |
|----------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|
|                                                                |                                | PARAMETER                                                                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD                                                                                                                                                                               | MARGIN<br>DEMO | REMARKS |
|                                                                |                                |                                                                                                 |                    |                    | SPECIFIED          | QUALIFIED |                                                                                                                                                                                              |                |         |
| EQUIP NO.:                                                     | 2SFC*LS33A                     | OP.TIME:                                                                                        | 100 DAYS           | >100DAYS[R2]       | 3                  | 2         | AN + DATA                                                                                                                                                                                    | YES            |         |
| SPEC NO.:                                                      | C021L                          | TEMP (F):                                                                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -                                                                                                                                                                                      | - - - -        | NOTE 1  |
| SYSTEM:                                                        | SPENT FUEL<br>POOL DRAINS [R2] | NORMAL                                                                                          | 104/98             | 120                | 1                  | 2         | TEST-SIM                                                                                                                                                                                     | NA             | NOTE 2  |
|                                                                |                                | ABNORMAL                                                                                        | 197                | 197                | 1                  | 2,4       | AN + DATA                                                                                                                                                                                    | NA             | NOTE 3  |
| TYPE: (DESCRIPTION)                                            |                                | ACCIDENT                                                                                        | 175                | 281                | 1                  | 2         | TEST-SIM                                                                                                                                                                                     | YES            |         |
| LEVEL SWITCH                                                   |                                | PRESS(PSIG)                                                                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -                                                                                                                                                                                      | - - - -        | NOTE 1  |
|                                                                |                                | NORMAL                                                                                          | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM                                                                                                                                                                                     | NA             |         |
|                                                                |                                | ABNORMAL                                                                                        | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM                                                                                                                                                                                     | NA             |         |
| MANUFACTURER:                                                  | MAGNETROL                      | ACCIDENT                                                                                        | 2.8                | 18                 | 1                  | 2         | TEST-SIM                                                                                                                                                                                     | YES            |         |
|                                                                |                                | RH (%):                                                                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -                                                                                                                                                                                      | - - - -        | NOTE 1  |
| MODEL NO.:                                                     | 291-MP-S1MD4                   | NORMAL                                                                                          | 50                 | 100                | 1                  | 2         | TEST-SIM                                                                                                                                                                                     | NA             |         |
|                                                                |                                | ABNORMAL                                                                                        | 50                 | 100                | 1                  | 2         | TEST-SIM                                                                                                                                                                                     | NA             |         |
| SAFETY FUNCTION: - - -                                         |                                | ACCIDENT                                                                                        | 100                | 100                | 1                  | 2         | TEST-SIM                                                                                                                                                                                     | NA             |         |
| SKIMMER SURGE TANK LVL ALM                                     |                                | RADIATION:                                                                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -                                                                                                                                                                                      | - - - -        | NOTE 1  |
|                                                                |                                | NORM GAMMA                                                                                      | 2.2E6              |                    | 1                  |           |                                                                                                                                                                                              | NA             |         |
|                                                                |                                | ACC GAMMA                                                                                       | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM                                                                                                                                                                                     | YES            |         |
| OP. CODE:                                                      | A                              | NORM BETA                                                                                       | NA                 |                    | 1                  |           |                                                                                                                                                                                              | NA             |         |
|                                                                |                                | ACC BETA                                                                                        | 6.1E6              |                    | 1                  |           |                                                                                                                                                                                              | YES            |         |
|                                                                |                                | NEUTRON                                                                                         | NA                 |                    | 1                  |           |                                                                                                                                                                                              | NA             |         |
|                                                                |                                | SPRAY                                                                                           | NA                 | YES                | NA                 | 2         | TEST-SIM                                                                                                                                                                                     | NA             |         |
| ACCURACY - -                                                   |                                | SUBMERGENCE                                                                                     | NA                 | NA                 | NA                 | NA        | NA                                                                                                                                                                                           | NA             |         |
| SPEC:                                                          | +/-0.25" WG                    |                                                                                                 |                    |                    |                    |           |                                                                                                                                                                                              |                |         |
| DEMO:                                                          | +/-0.25" WG                    |                                                                                                 |                    |                    |                    |           |                                                                                                                                                                                              |                |         |
| ZONE NO.:                                                      | SC328193                       |                                                                                                 |                    |                    |                    |           |                                                                                                                                                                                              |                |         |
| SUBMERGENCE:                                                   | NA                             |                                                                                                 |                    |                    |                    |           |                                                                                                                                                                                              |                |         |
| SPRAY:                                                         | NA                             |                                                                                                 |                    |                    |                    |           |                                                                                                                                                                                              |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY               |                                | DOCUMENT REFERENCE:                                                                             |                    |                    |                    |           | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED.                                                                                                              |                |         |
|                                                                |                                | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN<br>CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           | 2.NORMAL SPECIFIED TEMP ARE SHOWN AS<br>MAX DESIGN/AVERAGE.                                                                                                                                  |                |         |
|                                                                |                                | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,<br>SDDF # IEEE 07.124-5000F [R2]                  |                    |                    |                    |           | 3.LEVEL SWITCH IS QUALIFIED FOR<br>40 YEARS AT 108F AND DURING LOCA FOR<br>281F; THEREFORE, ABNORMAL TEMP OF 197F<br>WILL NOT HAVE ANY DETRIMENTAL EFFECT<br>ON THE SWITCH. SEE REFERENCE 4. |                |         |
|                                                                |                                | 3. POST-ACCIDENT OPERABILITY PERIOD:<br>FILE NO. 34-2-C5                                        |                    |                    |                    |           |                                                                                                                                                                                              |                |         |
|                                                                |                                | 4. CALCULATION NO. 12177-EQS-39                                                                 |                    |                    |                    |           |                                                                                                                                                                                              |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0598,CAT I |                                |                                                                                                 |                    |                    |                    |           |                                                                                                                                                                                              |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |                                |                                                                                                 |                    |                    |                    |           |                                                                                                                                                                                              |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2,4          |                                |                                                                                                 |                    |                    |                    |           |                                                                                                                                                                                              |                |         |
|                                                                |                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                   |                    |                    |                    |           |                                                                                                                                                                                              |                |         |





18-Mar-86

QUAL REF #\_C021LAJ\_ REV 2

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |     |             |             |         |
|-------------------------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----|-------------|-------------|---------|
|                                                             | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |     | QUAL METHOD | MARGIN DEMO | REMARKS |
| EQUIP NO.: 2SFC*LS33B                                       |                                            |                 |                 |                    |     |             |             |         |
| SPEC NO.: C021L                                             | OP.TIME:                                   | 100 DAYS        | >100DAYS[R2]    | 3                  | 2   | AN + DATA   | YES         |         |
| SYSTEM: SPENT FUEL POOL COOLING [R2]                        | TEMP (F):                                  |                 |                 |                    |     |             |             | NOTE 1  |
|                                                             | NORMAL                                     | 104/89          | 120             | 1                  | 2   | TEST-SIM    | NA          | NOTE 2  |
|                                                             | ABNORMAL                                   | 133             | 133             | 1                  | 2,4 | AN + DATA   | NA          | NOTE 3  |
|                                                             | ACCIDENT                                   | 175             | 281             | 1                  | 2   | TEST-SIM    | YES         |         |
| TYPE: (DESCRIPTION) LEVEL SWITCH                            | PRESS(PSIG)                                |                 |                 |                    |     |             |             | NOTE 1  |
|                                                             | NORMAL                                     | -0.25"WG        | ATMOS           | 1                  | 2   | TEST-SIM    | NA          |         |
|                                                             | ABNORMAL                                   | -0.25"WG        | ATMOS           | 1                  | 2   | TEST-SIM    | NA          |         |
|                                                             | ACCIDENT                                   | 2.8             | 18              | 1                  | 2   | TEST-SIM    | YES         |         |
| MANUFACTURER: MAGNETROL                                     | RH (%)                                     |                 |                 |                    |     |             |             | NOTE 1  |
|                                                             | NORMAL                                     | 50              | 100             | 1                  | 2   | TEST-SIM    | NA          |         |
|                                                             | ABNORMAL                                   | 50              | 100             | 1                  | 2   | TEST-SIM    | NA          |         |
|                                                             | ACCIDENT                                   | 100             | 100             | 1                  | 2   | TEST-SIM    | NA          |         |
| MODEL NO.: 291-MP-S1MD4                                     | RADIATION:                                 |                 |                 |                    |     |             |             | NOTE 1  |
| SAFETY FUNCTION: - - -                                      | NORM GAMMA                                 | 1.8E3           |                 | 1                  |     |             | NA          |         |
| SKIMMER SURGE TANK LVL ALM                                  | ACC GAMMA                                  | 5.0E5           | 2.2E8           | 1                  | 2   | TEST-SIM    | YES         |         |
|                                                             | NORM BETA                                  | NA              |                 | 1                  |     |             | NA          |         |
|                                                             | ACC BETA                                   | 6.1E6           |                 | 1                  |     |             | YES         |         |
|                                                             | NEUTRON                                    | NA              |                 | 1                  |     |             | NA          |         |
| OP. CODE: A                                                 | SPRAY                                      | NA              | YES             | NA                 | 2   | TEST-SIM    | NA          |         |
|                                                             | SUBMERGENCE                                | NA              | NA              | NA                 | NA  | NA          | NA          |         |
| ACCURACY - -                                                |                                            |                 |                 |                    |     |             |             |         |
| SPEC: +/-0.25                                               |                                            |                 |                 |                    |     |             |             |         |
| DEMO: +/-0.25                                               |                                            |                 |                 |                    |     |             |             |         |
| ZONE NO.: SC328187                                          |                                            |                 |                 |                    |     |             |             |         |
| SUBMERGENCE: NA                                             |                                            |                 |                 |                    |     |             |             |         |
| SPRAY: NA                                                   |                                            |                 |                 |                    |     |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               |                                            |                 |                 |                    |     |             |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                                            |                 |                 |                    |     |             |             |         |
| MAINT/SURVEILL - - -                                        |                                            |                 |                 |                    |     |             |             |         |
| REFERENCE: 2                                                |                                            |                 |                 |                    |     |             |             |         |
| QUALIFIED LIFE - - -                                        |                                            |                 |                 |                    |     |             |             |         |
| (YEARS): 40                                                 |                                            |                 |                 |                    |     |             |             |         |
| REFERENCE: 2,4                                              |                                            |                 |                 |                    |     |             |             |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL SPECIFIED TEMP ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.LEVEL SWITCH IS QUALIFIED FOR 40.YEARS AT 108F AND DURING LOCA FOR 281F; THEREFORE, ABNORMAL TEMP OF 133F WILL NOT HAVE ANY DETRIMENTAL EFFECT ON THE SWITCH. SEE REFERENCE 4.



18-Mar-86

QUAL REF #\_C021LAK\_ REV 2

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                         | PARAMETER    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|-----------------------------------------------|--------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                               |              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2SFC*LS33C                         | OP.TIME:     | 100 DAYS           | >100DAYS[R2]       | 3                  | 2         | AN + DATA      | YES            |         |
| SPEC NO.: C021L                               | TEMP (F):    |                    |                    |                    |           |                |                |         |
| SYSTEM: SPENT FUEL POOL COOLING [R2]          | NORMAL       | 104/98             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                               | ABNORMAL     | 197                | 197                | 1                  | 2,4       | AN + DATA      | NA             | NOTE 2  |
|                                               | ACCIDENT     | 175                | 281                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
| TYPE: (DESCRIPTION)                           | PRESS(PSIG): |                    |                    |                    |           |                |                |         |
| LEVEL SWITCH                                  | NORMAL       | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                               | ABNORMAL     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: MAGNETROL                       | ACCIDENT     | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
| MODEL NO.: 291-MP-S1MD4                       | RH (%):      |                    |                    |                    |           |                |                | NOTE 1  |
|                                               | NORMAL       | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                               | ABNORMAL     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                        | ACCIDENT     | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SKIMMER SURGE TANK LVL ALM                    | RADIATION:   |                    |                    |                    |           |                |                | NOTE 1  |
|                                               | NORM GAMMA   | 2.2E6              |                    | 1                  |           |                | NA             |         |
|                                               | ACC GAMMA    | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: A                                   | NORM BETA    | NA                 |                    | 1                  |           |                | NA             |         |
|                                               | ACC BETA     | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                               | NEUTRON      | NA                 |                    | 1                  |           |                | NA             |         |
|                                               | SPRAY        | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                  | SUBMERGENCE  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/-0.25                                 |              |                    |                    |                    |           |                |                |         |
| DEMO: +/-0.25                                 |              |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC328193                            |              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                               |              |                    |                    |                    |           |                |                |         |
| SPRAY: NA                                     |              |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO                      |              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY                          |              |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                  |              |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I                |              |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                          |              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                  |              |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                          |              |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                   |              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                                |              |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |              |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.124-5000F [R2]
3. POST-ACCIDENT OPERABILITY PERIOD: FILE NO. 34-2-C5
4. CALCULATION NO. 12177-EQS-39

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL SPECIFIED TEMP ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.LEVEL SWITCH IS QUALIFIED FOR 40 YEARS AT 108F AND DURING LOCA FOR 281F; THEREFORE, ABNORMAL TEMP OF 197F WILL NOT HAVE ANY DETRIMENTAL EFFECT ON THE SWITCH. SEE REFERENCE 4.



18-Mar-86

QUAL REF #\_C021LAL\_\_\_\_ REV 2

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |     |             |             |         |
|-------------------------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----|-------------|-------------|---------|
|                                                             | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |     | QUAL METHOD | MARGIN DEMO | REMARKS |
| EQUIP NO.: 2SFC*LS33D                                       | OP.TIME:                                   | 100 DAYS        | >100DAYS[R2]    | 3                  | 2   | AN + DATA   | YES         |         |
| SPEC NO.: C021L                                             | TEMP (F):                                  |                 |                 |                    |     |             |             | NOTE 1  |
| SYSTEM: SPENT FUEL POOL COOLING [R2]                        | NORMAL                                     | 104/89          | 120             | 1                  | 2   | TEST-SIM    | NA          | NOTE 2  |
|                                                             | ABNORMAL                                   | 133             | 133             | 1                  | 2,4 | AN + DATA   | NA          | NOTE 3  |
|                                                             | ACCIDENT                                   | 175             | 281             | 1                  | 2   | TEST-SIM    | YES         |         |
| TYPE: (DESCRIPTION) LEVEL SWITCH                            | PRESS (PSIG)                               |                 |                 |                    |     |             |             | NOTE 1  |
|                                                             | NORMAL                                     | -0.25"WG        | ATMOS           | 1                  | 2   | TEST-SIM    | NA          |         |
|                                                             | ABNORMAL                                   | -0.25"WG        | ATMOS           | 1                  | 2   | TEST-SIM    | NA          |         |
| MANUFACTURER: MAGNETROL                                     | ACCIDENT                                   | 2.8             | 18              | 1                  | 2   | TEST-SIM    | YES         |         |
| MODEL NO.: 291-MP-S1MD4                                     | RH (%):                                    |                 |                 |                    |     |             |             | NOTE 1  |
|                                                             | NORMAL                                     | 50              | 100             | 1                  | 2   | TEST-SIM    | NA          |         |
|                                                             | ABNORMAL                                   | 50              | 100             | 1                  | 2   | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -                                      | ACCIDENT                                   | 100             | 100             | 1                  | 2   | TEST-SIM    | NA          |         |
| SKIMMER SURGE TANK LVL ALM                                  | RADIATION:                                 |                 |                 |                    |     |             |             | NOTE 1  |
|                                                             | NORM GAMMA                                 | 1.8E3           |                 | 1                  |     |             | NA          |         |
|                                                             | ACC GAMMA                                  | 5.0E5           | 2.2E8           | 1                  | 2   | TEST-SIM    | YES         |         |
| OP. CODE: A                                                 | NORM BETA                                  | NA              |                 | 1                  |     |             | NA          |         |
|                                                             | ACC BETA                                   | 6.1E6           |                 | 1                  |     |             | YES         |         |
|                                                             | NEUTRON                                    | NA              |                 | 1                  |     |             | NA          |         |
|                                                             | SPRAY                                      | NA              | YES             | NA                 | 2   | TEST-SIM    | NA          |         |
| ACCURACY - -                                                | SUBMERGENCE                                | NA              | NA              | NA                 | NA  | NA          | NA          |         |
| SPEC: +/-0.25                                               |                                            |                 |                 |                    |     |             |             |         |
| DEMO: +/-0.25                                               |                                            |                 |                 |                    |     |             |             |         |
| ZONE NO.: SC328187                                          |                                            |                 |                 |                    |     |             |             |         |
| SUBMERGENCE: NA                                             |                                            |                 |                 |                    |     |             |             |         |
| SPRAY: NA                                                   |                                            |                 |                 |                    |     |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               |                                            |                 |                 |                    |     |             |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                                            |                 |                 |                    |     |             |             |         |
| MAINT/SURVEILL - - -                                        |                                            |                 |                 |                    |     |             |             |         |
| REFERENCE: 2                                                |                                            |                 |                 |                    |     |             |             |         |
| QUALIFIED LIFE - - -                                        |                                            |                 |                 |                    |     |             |             |         |
| (YEARS): 40                                                 |                                            |                 |                 |                    |     |             |             |         |
| REFERENCE: 2,4                                              |                                            |                 |                 |                    |     |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.               |                                            |                 |                 |                    |     |             |             |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL SPECIFIED TEMP ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.LEVEL SWITCH IS QUALIFIED FOR 40 YEARS AT 108F AND DURING LOCA FOR 281F; THEREFORE, ABNORMAL TEMP OF 133F WILL NOT HAVE ANY DETRIMENTAL EFFECT ON THE SWITCH. SEE REFERENCE 4.

DOCUMENT REFERENCE:  
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EGEDC-1, REV 3, DEC 20, 1985. [R2]  
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.124-5000F [R2]  
3. POST-ACCIDENT OPERABILITY PERIOD: FILE NO. 34-2-C5  
4. CALCULATION NO. 12177-EQS-39



QUAL REF # C021LAM REV 2

18-Mar-86

[illegible]





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[R2] INDICATES CHANGES MADE IN THIS REVISION.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[R2] INDICATES CHANGES MADE IN THIS REVISION.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          |                                 | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                     |                    |                    |                    |                                                                                 |                |                 |         |
|----------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|---------------------------------------------------------------------------------|----------------|-----------------|---------|
|                                                                |                                 | PARAMETER                                                                                      | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                 | QUAL<br>METHOD | MARGIN:<br>DEMO | REMARKS |
|                                                                |                                 |                                                                                                |                    |                    | SPECIFIED          | QUALIFIED                                                                       |                |                 |         |
| EQUIP NO.:                                                     | 2SFC*LS55B                      | OP.TIME:                                                                                       | NA                 | >100DAYS[R2]       | 3                  | 2                                                                               | AN + DATA      | YES             |         |
| SPEC NO.:                                                      | C021L                           | TEMP (F):                                                                                      | - - - -            | - - - -            | - - - -            | - - - -                                                                         | - - - -        | - - - -         | NOTE 1  |
| SYSTEM:                                                        | SPENT FUEL POOL<br>COOLING [R2] | NORMAL                                                                                         | 104/85 [R2]        | 120                | 1                  | 2                                                                               | TEST-SIM       | NA              | NOTE 2  |
|                                                                |                                 | ABNORMAL                                                                                       | 79                 | 120                | 1                  | 2                                                                               | TEST-SIM       | NA              |         |
| TYPE: (DESCRIPTION)                                            |                                 | ACCIDENT                                                                                       | 175                | 281                | 1                  | 2                                                                               | TEST-SIM       | YES             |         |
| LEVEL SWITCH                                                   |                                 | PRESS(PSIG)                                                                                    | - - - -            | - - - -            | - - - -            | - - - -                                                                         | - - - -        | - - - -         | NOTE 1  |
|                                                                |                                 | NORMAL                                                                                         | -0.25"WG           | ATMOS              | 1                  | 2                                                                               | TEST-SIM       | NA              |         |
|                                                                |                                 | ABNORMAL                                                                                       | -0.25"WG           | ATMOS              | 1                  | 2                                                                               | TEST-SIM       | NA              |         |
| MANUFACTURER: MAGNETROL                                        |                                 | ACCIDENT                                                                                       | .25                | 18                 | 1                  | 2                                                                               | TEST-SIM       | YES             |         |
|                                                                |                                 | RH (%) :                                                                                       | - - - -            | - - - -            | - - - -            | - - - -                                                                         | - - - -        | - - - -         | NOTE 1  |
| MODEL NO.:                                                     |                                 | NORMAL                                                                                         | 50                 | 100                | 1                  | 2                                                                               | TEST-SIM       | NA              |         |
| A-153-X-EP/VP-Y-SIMD4                                          |                                 | ABNORMAL                                                                                       | 50                 | 100                | 1                  | 2                                                                               | TEST-SIM       | NA              |         |
| SAFETY FUNCTION: - - -                                         |                                 | ACCIDENT                                                                                       | 100                | 100                | 1                  | 2                                                                               | TEST-SIM       | NA              |         |
| SPENT FUEL POOL WTR LOW LVL<br>ALM                             |                                 | RADIATION:                                                                                     | - - - -            | - - - -            | - - - -            | - - - -                                                                         | - - - -        | - - - -         | NOTE 1  |
|                                                                |                                 | NORM GAMMA                                                                                     | 7E5                |                    | 1                  |                                                                                 |                | NA              |         |
|                                                                |                                 | ACC GAMMA                                                                                      | 5.0E5              | 2.2E8              | 1                  | 2                                                                               | TEST-SIM       | YES             |         |
| OP. CODE: B                                                    |                                 | NORM BETA                                                                                      | NA                 |                    | 1                  |                                                                                 |                | NA              |         |
|                                                                |                                 | ACC BETA                                                                                       | 6.1E6              |                    | 1                  |                                                                                 |                | YES             |         |
|                                                                |                                 | NEUTRON                                                                                        | NA                 |                    | 1                  |                                                                                 |                | NA              |         |
|                                                                |                                 | SPRAY                                                                                          | NA                 | YES                | NA                 | 2                                                                               | TEST-SIM       | NA              |         |
| ACCURACY - -                                                   |                                 | SUBMERGENCE                                                                                    | NA                 | NA                 | NA                 | NA                                                                              | NA             | NA              |         |
| SPEC: +/-0.25                                                  |                                 |                                                                                                |                    |                    |                    |                                                                                 |                |                 |         |
| DEMO: +/-0.25                                                  |                                 |                                                                                                |                    |                    |                    |                                                                                 |                |                 |         |
| ZONE NO.:                                                      | SC353202                        |                                                                                                |                    |                    |                    |                                                                                 |                |                 |         |
| SUBMERGENCE:                                                   | NA                              | DOCUMENT REFERENCE:                                                                            |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED. |                |                 |         |
| SPRAY:                                                         | NA                              | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN<br>CRITERA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    | 2.NORMAL SPECIFIED TEMP ARE SHOWN AS<br>MAX DESIGN/AVERAGE.                     |                |                 |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY               |                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,<br>SDDF # IEEE 07.124-5000F [R2]                 |                    |                    |                    |                                                                                 |                |                 |         |
|                                                                |                                 | 3. POST-ACCIDENT OPERABILITY PERIOD:<br>FILE NO. 34-2-C4                                       |                    |                    |                    |                                                                                 |                |                 |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                 | 4. CALCULATION NO. 12177-EQS-39                                                                |                    |                    |                    |                                                                                 |                |                 |         |
|                                                                |                                 |                                                                                                |                    |                    |                    |                                                                                 |                |                 |         |
|                                                                |                                 |                                                                                                |                    |                    |                    |                                                                                 |                |                 |         |
| MAINT/SURVEILL - - -                                           |                                 |                                                                                                |                    |                    |                    |                                                                                 |                |                 |         |
| REFERENCE: 2                                                   |                                 |                                                                                                |                    |                    |                    |                                                                                 |                |                 |         |
| QUALIFIED LIFE - - -                                           |                                 |                                                                                                |                    |                    |                    |                                                                                 |                |                 |         |
| (YEARS): 40                                                    |                                 |                                                                                                |                    |                    |                    |                                                                                 |                |                 |         |
| REFERENCE: 2,4                                                 |                                 |                                                                                                |                    |                    |                    |                                                                                 |                |                 |         |
|                                                                |                                 |                                                                                                |                    |                    |                    |                                                                                 |                |                 |         |
|                                                                |                                 |                                                                                                |                    |                    |                    |                                                                                 |                |                 |         |
|                                                                |                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                  |                    |                    |                    |                                                                                 |                |                 |         |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          |                                      | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |           |           |           |         |
|----------------------------------------------------------------|--------------------------------------|--------------------------------------------|--------------------|--------------------|-----------|-----------|-----------|---------|
|                                                                |                                      |                                            |                    | DOCUMENT REFERENCE |           | QUAL      | MARGIN    | REMARKS |
|                                                                |                                      | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | SPECIFIED | QUALIFIED | METHOD    | DEMO    |
| EQUIP NO.:                                                     | 2DFR*LS150                           | OP.TIME:                                   | 100 DAYS           | >100DAYSIR2        | 3         | 2         | AN + DATA | YES     |
| SPEC NO.:                                                      | C021L                                | TEMP (F):                                  |                    |                    |           |           |           |         |
| SYSTEM:                                                        | REACTOR BUILDING<br>FLOOR DRAINS     | NORMAL                                     | 104/85             | 120                | 1         | 2         | TEST-SIM  | NA      |
|                                                                |                                      | ABNORMAL                                   | 92                 | 120                | 1         | 2         | TEST-SIM  | NA      |
|                                                                |                                      | ACCIDENT                                   | 175                | 281                | 1         | 2         | TEST-SIM  | YES     |
| TYPE: (DESCRIPTION)                                            | LEVEL SWITCH                         | PRESS (PSIG)                               |                    |                    |           |           |           |         |
|                                                                |                                      | NORMAL                                     | -0.25"WG           | ATMOS              | 1         | 2         | TEST-SIM  | NA      |
|                                                                |                                      | ABNORMAL                                   | -0.25"WG           | ATMOS              | 1         | 2         | TEST-SIM  | NA      |
| MANUFACTURER:                                                  | MAGNETROL                            | ACCIDENT                                   | 2.8                | 18                 | 1         | 2         | TEST-SIM  | YES     |
| MODEL NO.:                                                     |                                      | IRH (%):                                   |                    |                    |           |           |           |         |
|                                                                |                                      | NORMAL                                     | 50                 | 100                | 1         | 2         | TEST-SIM  | NA      |
|                                                                |                                      | ABNORMAL                                   | 50                 | 100                | 1         | 2         | TEST-SIM  | NA      |
| SAFETY FUNCTION:                                               | REACTOR BLDG<br>GEN AREA FLOOD ALARM | ACCIDENT                                   | 100                | 100                | 1         | 2         | TEST-SIM  | NA      |
|                                                                |                                      | RADIATION:                                 |                    |                    |           |           |           |         |
|                                                                |                                      | NORM GAMMA                                 | 1.1E7              |                    | 1         |           |           | NA      |
|                                                                |                                      | ACC GAMMA                                  | 3.2E7              | 2.2E8              | 1         | 2         | TEST-SIM  | YES     |
| OP. CODE:                                                      | A                                    | NORM BETA                                  | NA                 |                    | 1         |           |           | NA      |
|                                                                |                                      | ACC BETA                                   | 6.1E6              |                    | 1         |           |           | YES     |
|                                                                |                                      | NEUTRON                                    | NA                 |                    | 1         |           |           | NA      |
|                                                                |                                      | SPRAY                                      | NA                 | YES                | NA        | 2         | TEST-SIM  | NA      |
| ACCURACY - -                                                   |                                      | SUBMERGENCE                                | NA                 | NA                 | NA        | NA        | NA        | NA      |
| SPEC:                                                          | NA                                   |                                            |                    |                    |           |           |           |         |
| DEMO:                                                          | NA                                   |                                            |                    |                    |           |           |           |         |
| ZONE NO.:                                                      | SC175102                             |                                            |                    |                    |           |           |           |         |
| SUBMERGENCE:                                                   | NA                                   |                                            |                    |                    |           |           |           |         |
| SPRAY:                                                         | NA                                   |                                            |                    |                    |           |           |           |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY               |                                      |                                            |                    |                    |           |           |           |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                      |                                            |                    |                    |           |           |           |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |                                      |                                            |                    |                    |           |           |           |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2,4          |                                      |                                            |                    |                    |           |           |           |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985.
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.124-5000F
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 23-6-C5
- CALCULATION NO. 12177-EQS-39

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL SPECIFIED TEMP ARE SHOWN AS MAX DESIGN/AVERAGE.





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18-Mar-86

| EQUIPMENT DESCRIPTION           |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |        |
|---------------------------------|------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|--------|
|                                 |                  | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |        |
|                                 |                  |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |        |
| EQUIP NO.:                      | 2DFR*LS152       | OP.TIME:                                   | 100 DAYS           | >100DAYS           | CR2                | 3         | 2              | AN + DATA      | YES     |        |
| SPEC NO.:                       | C021L            | TEMP (F):                                  |                    |                    |                    |           |                |                |         |        |
| SYSTEM:                         | REACTOR BUILDING | NORMAL                                     | 104/85             | 120                |                    | 1         | 2              | TEST-SIM       | NA      | NOTE 1 |
|                                 | FLOOR DRAINS     | ABNORMAL                                   | 92                 | 120                |                    | 1         | 2              | TEST-SIM       | NA      | NOTE 2 |
| TYPE: (DESCRIPTION)             |                  | ACCIDENT                                   | 175                | 281                |                    | 1         | 2              | TEST-SIM       | YES     |        |
| LEVEL SWITCH                    |                  | PRESS (PSIG)                               |                    |                    |                    |           |                |                |         | NOTE 1 |
|                                 |                  | NORMAL                                     | -0.25"WG           | ATMOS              |                    | 1         | 2              | TEST-SIM       | NA      |        |
|                                 |                  | ABNORMAL                                   | -0.25"WG           | ATMOS              |                    | 1         | 2              | TEST-SIM       | NA      |        |
| MANUFACTURER:                   | MAGNETROL        | ACCIDENT                                   | 2.8                | 18                 |                    | 1         | 2              | TEST-SIM       | YES     |        |
|                                 |                  | IRH (%)                                    |                    |                    |                    |           |                |                |         | NOTE 1 |
| MODEL NO.:                      |                  | NORMAL                                     | 50                 | 100                |                    | 1         | 2              | TEST-SIM       | NA      |        |
| FLS-MPX-SIMD4                   |                  | ABNORMAL                                   | 50                 | 100                |                    | 1         | 2              | TEST-SIM       | NA      |        |
| SAFETY FUNCTION: REACTOR BLDG   |                  | ACCIDENT                                   | 100                | 100                |                    | 1         | 2              | TEST-SIM       | NA      |        |
| GEN AREA FLOOD ALARM            |                  | RADIATION:                                 |                    |                    |                    |           |                |                |         | NOTE 1 |
|                                 |                  | NORM GAMMA                                 | 1.1E7              |                    |                    | 1         |                |                | NA      |        |
|                                 |                  | ACC GAMMA                                  | 1.7E7              | 2.2E8              |                    | 1         | 2              | TEST-SIM       | YES     |        |
| OP. CODE:                       | A                | NORM BETA                                  | NA                 |                    |                    | 1         |                |                | NA      |        |
|                                 |                  | ACC BETA                                   | 6.1E6              |                    |                    | 1         |                |                | YES     |        |
|                                 |                  | NEUTRON                                    | NA                 |                    |                    | 1         |                |                | NA      |        |
|                                 |                  | SPRAY                                      | NA                 | YES                | NA                 |           | 2              | TEST-SIM       | NA      |        |
| ACCURACY - -                    |                  | SUBMERGENCE                                | NA                 | NA                 | NA                 |           | NA             | NA             | NA      |        |
| SPEC:                           | NA               |                                            |                    |                    |                    |           |                |                |         |        |
| DEMO:                           | NA               |                                            |                    |                    |                    |           |                |                |         |        |
| ZONE NO.:                       | SC175105         |                                            |                    |                    |                    |           |                |                |         |        |
| SUBMERGENCE:                    | NA               |                                            |                    |                    |                    |           |                |                |         |        |
| SPRAY:                          | NA               |                                            |                    |                    |                    |           |                |                |         |        |
| EQUIPMENT NOT SUBJECT TO        |                  |                                            |                    |                    |                    |           |                |                |         |        |
| SUBMERGENCE OR SPRAY            |                  |                                            |                    |                    |                    |           |                |                |         |        |
| DOCUMENTATION ACCEPTABILITY:    |                  |                                            |                    |                    |                    |           |                |                |         |        |
| ACCEPTABLE TO NUREG 0588, CAT I |                  |                                            |                    |                    |                    |           |                |                |         |        |
|                                 |                  |                                            |                    |                    |                    |           |                |                |         |        |
|                                 |                  |                                            |                    |                    |                    |           |                |                |         |        |
| MAINT/SURVEILL - - -            |                  |                                            |                    |                    |                    |           |                |                |         |        |
| REFERENCE: 2                    |                  |                                            |                    |                    |                    |           |                |                |         |        |
| QUALIFIED LIFE - - -            |                  |                                            |                    |                    |                    |           |                |                |         |        |
| (YEARS): 40                     |                  |                                            |                    |                    |                    |           |                |                |         |        |
| REFERENCE: 2,4                  |                  |                                            |                    |                    |                    |           |                |                |         |        |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985.
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.124-5000F
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 23-6-C5
- CALCULATION NO. 12177-EQS-39

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          |  | PARAMETER   | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |         | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|----------------------------------------------------------------|--|-------------|--------------------|--------------------|--------------------|---------|----------------|----------------|---------|
| EQUIP NO.: 2CMS*TES0A                                          |  | OP.TIME:    | NA                 | >100 DAYS          | 3                  | 2       | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.: C041D                                                |  | TEMP (F):   | - - - -            | - - - -            | - - - -            | - - - - | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                          |  | NORMAL      | 104/85             | 140 [R2]           | 1                  | 2,4     | TEST-SIM       | NA             | NOTE 2  |
|                                                                |  | ABNORMAL    | 92                 | 190                | 1                  | 2,4     | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                            |  | ACCIDENT    | 175                | 400                | 1                  | 2       | TEST-SIM       | YES            |         |
| RESISTANCE TEMPERATURE DETECTOR (RTD)                          |  | PRESS(PSIG) | - - - -            | - - - -            | - - - -            | - - - - | - - - -        | - - - -        | NOTE 1  |
|                                                                |  | NORMAL      | -0.25"WG           | ATMOS              | 1                  | 2       | TEST-SIM       | NA             |         |
|                                                                |  | ABNORMAL    | -0.25"WG           | ATMOS              | 1                  | 2       | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO                                             |  | ACCIDENT    | 2.8                | 65 [R2]            | 1                  | 2       | TEST-SIM       | YES            |         |
|                                                                |  | RH (%):     | - - - -            | - - - -            | - - - -            | - - - - | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:122-4030-04-2.7-82.3                                 |  | NORMAL      | 50                 | 100                | 1                  | 2       | TEST-SIM       | NA             |         |
|                                                                |  | ABNORMAL    | 50                 | 100                | 1                  | 2       | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - - NA                                      |  | ACCIDENT    | 100                | STEAM              | 1                  | 2       | TEST-SIM       | NA             |         |
|                                                                |  | RADIATION:  | - - - -            | - - - -            | - - - -            | - - - - | - - - -        | - - - -        | NOTE 1  |
|                                                                |  | NORM GAMMA  | 7.7E5 [R2]         |                    | 1                  |         |                | NA             |         |
|                                                                |  | ACC GAMMA   | 5.0E5              | 2.2E8              | 1                  | 2       | TEST-SIM       | YES            |         |
| OP. CODE: B                                                    |  | NORM BETA   | NA                 |                    | 1                  |         |                | NA             |         |
|                                                                |  | ACC BETA    | 6.1E6              |                    | 1                  |         |                | YES            |         |
|                                                                |  | NEUTRON     | NA                 |                    | 1                  |         |                | NA             |         |
|                                                                |  | SPRAY       | NA                 | YES                | NA                 | 2       | TEST-SIM       | NA             |         |
| ACCURACY -- SPEC: +/-1.2F NOTE 5 DEMO: +/-1.2F                 |  | SUBMERGENCE | NA                 | NA                 | NA                 | NA      | NA             | NA             |         |
| ZONE NO.: SC196113                                             |  |             |                    |                    |                    |         |                |                |         |
| SUBMERGENCE:                                                   |  |             |                    |                    |                    |         |                |                |         |
| ISPRAY:                                                        |  |             |                    |                    |                    |         |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                  |  |             |                    |                    |                    |         |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |  |             |                    |                    |                    |         |                |                |         |
|                                                                |  |             |                    |                    |                    |         |                |                |         |
| MAINT/SURVEILL --<br>REFERENCE: 2 (NOTE 4)                     |  |             |                    |                    |                    |         |                |                |         |
| QUALIFIED LIFE --<br>(YEARS): 40<br>REFERENCE: 2,4             |  |             |                    |                    |                    |         |                |                |         |
|                                                                |  |             |                    |                    |                    |         |                |                |         |
|                                                                |  |             |                    |                    |                    |         |                |                |         |
|                                                                |  |             |                    |                    |                    |         |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION                   |  |             |                    |                    |                    |         |                |                |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.  
4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.  
5.Factory CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.  
6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.



| EQUIPMENT DESCRIPTION                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-------------------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                             | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                             |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CMS*TE50B                                       |                                            |                    |                    |                    |           |                |                |         |
| ISPEC NO.: C041D                                            | OP.TIME:                                   | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                       | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                             | NORMAL                                     | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                                             | ABNORMAL                                   | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| I TYPE: (DESCRIPTION)                                       | ACCIDENT                                   | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
| RESISTANCE TEMPERATURE DETECTOR (RTD)                       | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                             | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                             | ABNORMAL                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO                                          | ACCIDENT                                   | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                             | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.: 122-4030-04-2.7-82.3                             | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                             | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - - NA                                   | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                             | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                             | NORM GAMMA                                 | 17.7E5 [R2]        |                    | 1                  |           |                | NA             |         |
|                                                             | ACC GAMMA                                  | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: B                                                 | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                             | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                             | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                             | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - - SPEC: +/-1.2F NOTE 5 DEMO: +/-1.2F             | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.: SC196113                                          |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                |                                            |                    |                    |                    |           |                |                |         |
| ISPRAY:                                                     |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - - REFERENCE: 2 (NOTE 4)                  |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - - (YEARS): 40 REFERENCE: 2,4             |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION                |                                            |                    |                    |                    |           |                |                |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.

4.TERMIAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.

5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.

6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.



| EQUIPMENT DESCRIPTION                                          |                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                       |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                |                                          | PARAMETER                                                                                        | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                    |
|                                                                |                                          |                                                                                                  |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                            |
| EQUIP NO.:                                                     | 2CMS*TE50C                               |                                                                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                            |
| SPEC NO.:                                                      | C041D                                    | OP.TIME:                                                                                         | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3                                                                                                                                                                                                                                                     |
| SYSTEM:                                                        | CONTAINMENT<br>MONITORING SYSTEM         | TEMP (F):                                                                                        |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                     |
|                                                                |                                          | NORMAL                                                                                           | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                     |
|                                                                |                                          | ABNORMAL                                                                                         | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |                                                                                                                                                                                                                                                            |
| TYPE: (DESCRIPTION)                                            | RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | ACCIDENT                                                                                         | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                            |
|                                                                |                                          | PRESS (PSIG)                                                                                     |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                     |
|                                                                |                                          | NORMAL                                                                                           | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                            |
|                                                                |                                          | ABNORMAL                                                                                         | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                            |
| MANUFACTURER:                                                  | PYCO                                     | ACCIDENT                                                                                         | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                            |
|                                                                |                                          | RH (%)                                                                                           |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                     |
| MODEL NO.:                                                     | 122-4030-04-2.7-82.3                     | NORMAL                                                                                           | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                            |
|                                                                |                                          | ABNORMAL                                                                                         | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                            |
| SAFETY FUNCTION:                                               | - - -                                    | ACCIDENT                                                                                         | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                            |
| NA                                                             |                                          | RADIATION:                                                                                       |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                     |
|                                                                |                                          | NORM GAMMA                                                                                       | 7.7E5 [R2]         |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                                            |
|                                                                |                                          | ACC GAMMA                                                                                        | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                            |
| OP. CODE:                                                      | B                                        | NORM BETA                                                                                        | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                                            |
|                                                                |                                          | ACC BETA                                                                                         | 6.1E6              |                    | 1                  |           |                | YES            |                                                                                                                                                                                                                                                            |
|                                                                |                                          | NEUTRON                                                                                          | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                                            |
|                                                                |                                          | SPRAY                                                                                            | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                            |
| ACCURACY - -                                                   |                                          | SUBMERGENCE                                                                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                            |
| SPEC:                                                          | +/-1.2F NOTE 5                           |                                                                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                            |
| DEMO:                                                          | +/-1.2F                                  |                                                                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                            |
| ZONE NO.:                                                      | SC196113                                 |                                                                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                            |
| SUBMERGENCE:                                                   |                                          | DOCUMENT REFERENCE:                                                                              |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED.                                                                                                                                                                            |
| SPRAY:                                                         |                                          | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN<br>CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2] |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS<br>MAX DESIGN/AVERAGE.                                                                                                                                                                                                  |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY               |                                          | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,<br>SDDF # IEEE-07-145-5003 B THRU G                |                    |                    |                    |           |                |                | 3.OPERABILITY PERIOD EXTENDED FROM 30<br>DAYS TESTED VALUE TO 100 DAYS PLUS<br>MARGIN BY ANALYSIS.                                                                                                                                                         |
|                                                                |                                          | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:<br>FILE NO.33-2-C8                                     |                    |                    |                    |           |                |                | 4.TERMINAL HEAD GASKET MUST BE REPLACED<br>WITH A NEW GASKET WHENEVER HEAD COVER<br>IS REMOVED, IN ORDER TO MAINTAIN<br>QUALIFICATION.                                                                                                                     |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                          | 4. SWEC CALCULATION NO. 12177-EQS-029                                                            |                    |                    |                    |           |                |                | 5.FACTORY CERTIFICATION TESTING OF RTD'S<br>HAS DEMONSTRATED ACCURACY OF +/-1.0 F<br>THE QUALIFICATION TYPE TESTING HAS<br>SHOWN AN ACCURACY OF +/-1.2 F.<br>A REVIEW OF THE SETPOINT CALCULATIONS<br>HAS SHOWN THAT +/-1.2F IS AN<br>ACCEPTABLE ACCURACY. |
|                                                                |                                          |                                                                                                  |                    |                    |                    |           |                |                | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL<br>TO MAINTAIN QUALIFICATION. USE CONAX<br>"ECSA" OR EQUIVALENT.                                                                                                                                                     |
| MAINT/SURVEILL - - -                                           |                                          |                                                                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                            |
| REFERENCE: 2 (NOTE 4)                                          |                                          |                                                                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                            |
| QUALIFIED LIFE - - -                                           |                                          |                                                                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                            |
| (YEARS): 40                                                    |                                          |                                                                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                            |
| REFERENCE: 2,4                                                 |                                          |                                                                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                            |
|                                                                |                                          | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                     |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                            |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



19-Feb-86

| EQUIPMENT DESCRIPTION          |                      | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                       |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
|--------------------------------|----------------------|--------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------|--------|
|                                |                      | PARAMETER                                                                                        | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                                                                                                                                                                           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |        |
|                                |                      |                                                                                                  |                    |                    | SPECIFIED          | QUALIFIED                                                                                                                                                                                                                                 |                |                |         |        |
| EQUIP NO.:                     | 2CMS*TES1A           |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
| SPEC NO.:                      | C041D                | OP.TIME:                                                                                         | NA                 | >100 DAYS          | 3                  | 2                                                                                                                                                                                                                                         | AN+DATA        | YES            |         | NOTE 3 |
| SYSTEM:                        | CONTAINMENT          | TEMP (F):                                                                                        | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                   | - - - -        | - - - -        | - - - - | NOTE 1 |
|                                | MONITORING SYSTEM    | NORMAL                                                                                           | 104/85             | 140 [R2]           | 1                  | 2,4                                                                                                                                                                                                                                       | TEST-SIM       | NA             |         | NOTE 2 |
|                                |                      | ABNORMAL                                                                                         | 92                 | 190                | 1                  | 2,4                                                                                                                                                                                                                                       | TEST-SIM       | NA             |         |        |
| TYPE: (DESCRIPTION)            |                      | ACCIDENT                                                                                         | 175                | 400                | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | YES            |         |        |
| RESISTANCE TEMPERATURE         |                      | PRESS (PSIG)                                                                                     | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                   | - - - -        | - - - -        | - - - - | NOTE 1 |
| DETECTOR (RTD)                 |                      | NORMAL                                                                                           | -0.25"WG           | ATMOS              | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |        |
|                                |                      | ABNORMAL                                                                                         | -0.25"WG           | ATMOS              | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |        |
| MANUFACTURER: PYCO             |                      | ACCIDENT                                                                                         | 2.8                | 65 [R2]            | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | YES            |         |        |
|                                |                      | RH (%):                                                                                          | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                   | - - - -        | - - - -        | - - - - | NOTE 1 |
| MODEL NO.:                     | 122-4030-04-2.7-82.3 | NORMAL                                                                                           | 50                 | 100                | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |        |
|                                |                      | ABNORMAL                                                                                         | 50                 | 100                | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |        |
| SAFETY FUNCTION: - - -         |                      | ACCIDENT                                                                                         | 100                | STEAM              | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |        |
| NA                             |                      | RADIATION:                                                                                       | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                   | - - - -        | - - - -        | - - - - | NOTE 1 |
|                                |                      | NORM GAMMA                                                                                       | 7.7ES [R2]         |                    | 1                  |                                                                                                                                                                                                                                           |                | NA             |         |        |
|                                |                      | ACC GAMMA                                                                                        | 5.0E5              | 2.2E8              | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | YES            |         |        |
| OP. CODE: B                    |                      | NORM BETA                                                                                        | NA                 |                    | 1                  |                                                                                                                                                                                                                                           |                | NA             |         |        |
|                                |                      | ACC BETA                                                                                         | 6.1E6              |                    | 1                  |                                                                                                                                                                                                                                           |                | YES            |         |        |
|                                |                      | NEUTRON                                                                                          | NA                 |                    | 1                  |                                                                                                                                                                                                                                           |                | NA             |         |        |
|                                |                      | SPRAY                                                                                            | NA                 | YES                | NA                 | 2                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |        |
| ACCURACY - -                   |                      | SUBMERGENCE                                                                                      | NA                 | NA                 | NA                 | NA                                                                                                                                                                                                                                        | NA             | NA             |         |        |
| SPEC:                          | +/-1.2F NOTE 5       |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
| DEMO:                          | +/-1.2F              |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
| ZONE NO.:                      | SC196113             |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
| SUBMERGENCE:                   |                      | DOCUMENT REFERENCE:                                                                              |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                              |                |                |         |        |
| SPRAY:                         |                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]    |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                    |                |                |         |        |
| EQUIPMENT NOT SUBJECT TO       |                      | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                   |                    |                    |                    | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                              |                |                |         |        |
| SUBMERGENCE OR SPRAY           |                      | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8                                        |                    |                    |                    | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                             |                |                |         |        |
| DOCUMENTATION ACCEPTABILITY:   |                      | 4. SWEC CALCULATION NO. 12177-EQS-029                                                            |                    |                    |                    | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |                |                |         |        |
| ACCEPTABLE TO NUREG 0508,CAT 1 |                      | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT. |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
|                                |                      |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
| MAINT/SURVEILL - - -           |                      |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
| REFERENCE: 2 (NOTE 4)          |                      |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
| QUALIFIED LIFE - - -           |                      |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
| (YEARS): 40                    |                      |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
| REFERENCE: 2,4                 |                      |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
|                                |                      |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
|                                |                      |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |
|                                |                      | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                     |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |        |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|---------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                 | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                 |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.: 2CMS*TE51B           | OP.TIME:                                        | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3                                          |
| SPEC NO.: C041D                 | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| SYSTEM: CONTAINMENT             | NORMAL                                          | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2                                          |
| MONITORING SYSTEM               | ABNORMAL                                        | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |                                                 |
| TYPE: (DESCRIPTION)             | ACCIDENT                                        | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| RESISTANCE TEMPERATURE          | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| DETECTOR (RTD)                  | NORMAL                                          | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| MANUFACTURER: PYCO              | ABNORMAL                                        | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| MODEL NO.: 122-4030-04-2.7-82.3 | ACCIDENT                                        | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| SAFETY FUNCTION: - - -          | IRH (%)                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| NA                              | NORMAL                                          | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                 | ABNORMAL                                        | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                 | ACCIDENT                                        | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                 | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
|                                 | NORM GAMMA                                      | 7.7E5 [R2]         |                    | 1                  |           |                | NA             |                                                 |
| OP. CODE: B                     | ACC GAMMA                                       | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |                                                 |
|                                 | NORM BETA                                       | NA                 |                    | 1                  |           |                | NA             |                                                 |
|                                 | ACC BETA                                        | 6.1E6              |                    | 1                  |           |                | YES            |                                                 |
|                                 | NEUTRON                                         | NA                 |                    | 1                  |           |                | NA             |                                                 |
| ACCURACY - -                    | SPRAY                                           | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |                                                 |
| SPEC: +/-1.2F NOTE 5            | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| DEMO: +/-1.2F                   |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.: SC196113              |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE:                    | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY:                          | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
| EQUIPMENT NOT SUBJECT TO        | CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]   |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS              |
| SUBMERGENCE OR SPRAY            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | MAX DESIGN/AVERAGE.                             |
|                                 | SDDF # IEEE-07-145-5003 B THRU G                |                    |                    |                    |           |                |                | 3.OPERABILITY PERIOD EXTENDED FROM 30           |
|                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                | DAYS TESTED VALUE TO 100 DAYS PLUS              |
| DOCUMENTATION ACCEPTABILITY:    | FILE NO.33-2-C8                                 |                    |                    |                    |           |                |                | MARGIN BY ANALYSIS.                             |
| ACCEPTABLE TO NUREG 0588,CAT I  | 4. SWEC CALCULATION NO. 12177-EQS-029           |                    |                    |                    |           |                |                | 4.TERMINAL HEAD GASKET MUST BE REPLACED         |
|                                 |                                                 |                    |                    |                    |           |                |                | WITH A NEW GASKET WHENEVER HEAD COVER           |
|                                 |                                                 |                    |                    |                    |           |                |                | IS REMOVED, IN ORDER TO MAINTAIN                |
|                                 |                                                 |                    |                    |                    |           |                |                | QUALIFICATION.                                  |
| MAINT/SURVEILL - - -            |                                                 |                    |                    |                    |           |                |                | 5.FACTORY CERTIFICATION TESTING OF RTD'S        |
| REFERENCE: 2 (NOTE 4)           |                                                 |                    |                    |                    |           |                |                | HAS DEMONSTRATED ACCURACY OF (+/-1.0 F          |
|                                 |                                                 |                    |                    |                    |           |                |                | THE QUALIFICATION TYPE TESTING HAS              |
| QUALIFIED LIFE - - -            |                                                 |                    |                    |                    |           |                |                | SHOWN AN ACCURACY OF +/-1.2 F.                  |
| (YEARS): 40                     |                                                 |                    |                    |                    |           |                |                | A REVIEW OF THE SETPOINT CALCULATIONS           |
| REFERENCE: 2,4                  |                                                 |                    |                    |                    |           |                |                | HAS SHOWN THAT +/-1.2F IS AN                    |
|                                 |                                                 |                    |                    |                    |           |                |                | ACCEPTABLE ACCURACY.                            |
|                                 |                                                 |                    |                    |                    |           |                |                | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL           |
|                                 |                                                 |                    |                    |                    |           |                |                | TO MAINTAIN QUALIFICATION. USE CONAX            |
|                                 |                                                 |                    |                    |                    |           |                |                | "ECSA" OR EQUIVALENT.                           |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION    |                    |                    |                    |           |                |                |                                                 |



| EQUIPMENT DESCRIPTION                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|----------------------------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                                | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                                |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2CMS*TE51C                                          | OP.TIME:                                   | NA              | >100 DAYS       | 3                  | 2         | AN+DATA     | YES         | NOTE 3  |
| SPEC NO.: C041D                                                | TEMP (F):                                  | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                          | NORMAL                                     | 104/85          | 140 [R2]        | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2  |
|                                                                | ABNORMAL                                   | 92              | 190             | 1                  | 2,4       | TEST-SIM    | NA          |         |
|                                                                | ACCIDENT                                   | 175             | 400             | 1                  | 2         | TEST-SIM    | YES         |         |
| TYPE: (DESCRIPTION)                                            | PRESS(PSIG)                                | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| RESISTANCE TEMPERATURE DETECTOR (RTD)                          | NORMAL                                     | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                | ABNORMAL                                   | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: PYCO                                             | ACCIDENT                                   | 2.8             | 65 [R2]         | 1                  | 2         | TEST-SIM    | YES         |         |
| MODEL NO.:122-4030-04-2.7-82.3                                 | RH (%) :                                   | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                                                | NORMAL                                     | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                | ABNORMAL                                   | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - - NA                                      | ACCIDENT                                   | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                | RADIATION:                                 | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                                                | NORM GAMMA                                 | 7.7E5 [R2]      |                 | 1                  |           |             | NA          |         |
|                                                                | ACC GAMMA                                  | 5.0E5           | 2.2E8           | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE: B                                                    | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                                                | ACC BETA                                   | 6.1E6           |                 | 1                  |           |             | YES         |         |
|                                                                | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                                                | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY - - SPEC: +/-1.2F NOTE 5<br>DEMO: +/-1.2F             | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ZONE NO.: SC196113                                             |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                                   |                                            |                 |                 |                    |           |             |             |         |
| ISPRAY:                                                        |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                  |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 058B,CAT I |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2 (NOTE 4)                  |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2,4          |                                            |                 |                 |                    |           |             |             |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.  
 4.TERMIAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.  
 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.  
 6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.





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OF 1

| EQUIPMENT DESCRIPTION                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                    |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             | PARAMETER                                                                                     | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                    |
|                                                             |                                                                                               |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                            |
| EQUIP NO.: 2CMS*TE51D                                       |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| SPEC NO.: C041D                                             | OP.TIME:                                                                                      | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3                                                                                                                                                                                                                                     |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                       | TEMP (F):                                                                                     |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                     |
|                                                             | NORMAL                                                                                        | 104/85             | 140 [R2]           | 1                  | 2, 4      | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                     |
|                                                             | ABNORMAL                                                                                      | 92                 | 190                | 1                  | 2, 4      | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| TYPE: (DESCRIPTION)                                         | ACCIDENT                                                                                      | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                            |
| RESISTANCE TEMPERATURE DETECTOR (RTD)                       | PRESS (PSIG)                                                                                  |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                     |
|                                                             | NORMAL                                                                                        | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
|                                                             | ABNORMAL                                                                                      | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| MANUFACTURER: PYCO                                          | ACCIDENT                                                                                      | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                            |
|                                                             | RH. (%)                                                                                       |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                     |
| MODEL NO.: 122-4030-04-2.7-82.3                             | NORMAL                                                                                        | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
|                                                             | ABNORMAL                                                                                      | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| SAFETY FUNCTION: - - -                                      | ACCIDENT                                                                                      | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| NA                                                          | RADIATION:                                                                                    |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                     |
|                                                             | NORM GAMMA                                                                                    | 7.7E5 [R2]         |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                            |
|                                                             | ACC GAMMA                                                                                     | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                            |
| OP. CODE: B                                                 | NORM BETA                                                                                     | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                            |
|                                                             | ACC BETA                                                                                      | 6.1E6              |                    | 1                  |           |                | YES            |                                                                                                                                                                                                                                            |
|                                                             | NEUTRON                                                                                       | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                            |
|                                                             | SPRAY                                                                                         | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| ACCURACY - -                                                | SUBMERGENCE                                                                                   | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                            |
| SPEC: +/-1.2F NOTE 5                                        |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| DEMO: +/-1.2F                                               |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| ZONE NO.: SC196113                                          |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| SUBMERGENCE:                                                | DOCUMENT REFERENCE:                                                                           |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |
| SPRAY:                                                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2] |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                |                    |                    |                    |           |                |                | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |
|                                                             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8                                     |                    |                    |                    |           |                |                | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I | 4. SWEC CALCULATION NO. 12177-EQS-029                                                         |                    |                    |                    |           |                |                | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
|                                                             |                                                                                               |                    |                    |                    |           |                |                | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.                                                                                                                                           |
| MAINT/SURVEILL - - -                                        |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| REFERENCE: 2 (NOTE 4)                                       |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| QUALIFIED LIFE - - -                                        |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| (YEARS): 40                                                 |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| REFERENCE: 2, 4                                             |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
|                                                             | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |



| EQUIPMENT DESCRIPTION                        |                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|----------------------------------------------|------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                              |                        | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                              |                        |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                   | 2CMS*TE52A             | OP.TIME:                                   | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                    | C041D                  | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                      | CONTAINMENT            | NORMAL                                     | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                              | MONITORING SYSTEM      | ABNORMAL                                   | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                          |                        | ACCIDENT                                   | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                              | RESISTANCE TEMPERATURE | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                              | DETECTOR (RTD)         | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                              |                        | ABNORMAL                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                | PYCO                   | ACCIDENT                                   | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                              |                        | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                                   | 122-4030-04-2.7-82.3   | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                              |                        | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                             | - - -                  | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                              | NA                     | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                              |                        | NORM GAMMA                                 | 7.7E5 [R2]         |                    | 1                  |           |                | NA             |         |
|                                              |                        | ACC GAMMA                                  | 1.0E8              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                    | B                      | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                              |                        | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                              |                        | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                              |                        | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                 |                        | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
|                                              | SPEC: +/-1.2F NOTE 5   |                                            |                    |                    |                    |           |                |                |         |
|                                              | DEMO: +/-1.2F          |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                    | SC196114               |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                 |                        |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                       |                        |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO                     |                        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY                         |                        |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                 |                        |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0580, CAT 1              |                        |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                         |                        |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)                        |                        |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                         |                        |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                  |                        |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                               |                        |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION |                        |                                            |                    |                    |                    |           |                |                |         |

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3. OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.

4. TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.

5. FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.

6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.



22-Mar-86

QUAL REF #\_C041DAJ REV 2

| EQUIPMENT DESCRIPTION                            |                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION   |                    |                    |                    |           |                |                |         |
|--------------------------------------------------|------------------------------------------|----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                  |                                          | PARAMETER                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                  |                                          |                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                       | 2CMS*TE52B                               | OP.TIME:                                     | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                        | C041D                                    | TEMP (F):                                    |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM:                                          | CONTAINMENT<br>MONITORING SYSTEM         | NORMAL                                       | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                                  |                                          | ABNORMAL                                     | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                              | RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | ACCIDENT                                     | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                  |                                          | PRESS (PSIG)                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |                                          | NORMAL                                       | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                                          | ABNORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                    | PYCO                                     | ACCIDENT                                     | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                  |                                          | RH (%):                                      |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                                       | 122-4030-04-2.7-82.3                     | NORMAL                                       | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                                          | ABNORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                 | - - -                                    | ACCIDENT                                     | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                                               |                                          | RADIATION:                                   |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |                                          | NORM GAMMA                                   | 17.7E5 [R2]        |                    | 1                  |           |                | NA             |         |
|                                                  |                                          | ACC GAMMA                                    | 1.0E8              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                        | B                                        | NORM BETA                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                  |                                          | ACC BETA                                     | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                  |                                          | NEUTRON                                      | NA                 |                    | 1                  |           |                | NA             |         |
|                                                  |                                          | SPRAY                                        | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                     |                                          | SUBMERGENCE                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                                            | +/-1.2F NOTE 5                           |                                              |                    |                    |                    |           |                |                |         |
| DEMO:                                            | +/-1.2F                                  |                                              |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                        | SC196114                                 |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                     |                                          |                                              |                    |                    |                    |           |                |                |         |
| SPRAY:                                           |                                          |                                              |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY |                                          |                                              |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                     |                                          |                                              |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I                  |                                          |                                              |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                             |                                          |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)                            |                                          |                                              |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                             |                                          |                                              |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                      |                                          |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                                   |                                          |                                              |                    |                    |                    |           |                |                |         |
|                                                  |                                          | [R2] INDICATES CHANGES MADE IN THIS REVISION |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8
- SWEC CALCULATION NO. 12177-EQS-029

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.  
4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.  
5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.  
6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.



22-Mar-86

QUAL REF #\_C041DAK REV 2

| EQUIPMENT DESCRIPTION                                        |                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                    |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
|--------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                              |                                       | PARAMETER                                                                                     | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                    |
|                                                              |                                       |                                                                                               |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                            |
| EQUIP NO.:                                                   | 2CMS*TE52C                            | OP.TIME:                                                                                      | NA              | >100 DAYS       | 3                  | 2         | AN+DATA     | YES         | NOTE 3                                                                                                                                                                                                                                     |
| SPEC NO.:                                                    | C041D                                 | TEMP (F):                                                                                     | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                     |
| SYSTEM:                                                      | CONTAINMENT MONITORING SYSTEM         | NORMAL                                                                                        | 104/85          | 140 [R2]        | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2                                                                                                                                                                                                                                     |
|                                                              |                                       | ABNORMAL                                                                                      | 92              | 190             | 1                  | 2,4       | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| TYPE: (DESCRIPTION)                                          | RESISTANCE TEMPERATURE DETECTOR (RTD) | ACCIDENT                                                                                      | 175             | 400             | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
|                                                              |                                       | PRESS (PSIG)                                                                                  | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                     |
|                                                              |                                       | NORMAL                                                                                        | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
|                                                              |                                       | ABNORMAL                                                                                      | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| MANUFACTURER:                                                | PYCO                                  | ACCIDENT                                                                                      | 2.8             | 65 [R2]         | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
|                                                              |                                       | RH (%):                                                                                       | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                     |
| MODEL NO.:                                                   | 122-4030-04-2.7-82.3                  | NORMAL                                                                                        | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
|                                                              |                                       | ABNORMAL                                                                                      | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| SAFETY FUNCTION:                                             | - - -                                 | ACCIDENT                                                                                      | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| NA                                                           |                                       | RADIATION:                                                                                    | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                     |
|                                                              |                                       | NORM GAMMA                                                                                    | 7.7E5 [R2]      |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                            |
|                                                              |                                       | ACC GAMMA                                                                                     | 1.0E8           | 2.2E8           | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
| OP. CODE:                                                    | B                                     | NORM BETA                                                                                     | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                            |
|                                                              |                                       | ACC BETA                                                                                      | 6.1E6           |                 | 1                  |           |             | YES         |                                                                                                                                                                                                                                            |
|                                                              |                                       | NEUTRON                                                                                       | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                            |
| ACCURACY - -                                                 |                                       | SPRAY                                                                                         | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| SPEC:                                                        | +/-1.2F NOTE 5                        | SUBMERGENCE                                                                                   | NA              | NA              | NA                 | NA        | NA          | NA          |                                                                                                                                                                                                                                            |
| DEMO:                                                        | +/-1.2F                               |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| ZONE NO.:                                                    | SC196114                              |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| SUBMERGENCE:                                                 |                                       | DOCUMENT REFERENCE:                                                                           |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |
| SPRAY:                                                       |                                       | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2] |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                |                                       | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                |                 |                 |                    |           |             |             | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |
|                                                              |                                       | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8                                     |                 |                 |                    |           |             |             | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588, CAT I |                                       | 4. SWEC CALCULATION NO. 12177-EQS-029                                                         |                 |                 |                    |           |             |             | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
|                                                              |                                       |                                                                                               |                 |                 |                    |           |             |             | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.                                                                                                                                           |
| MAINT/SURVEILL - - -                                         |                                       |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| REFERENCE:                                                   | 2 (NOTE 4)                            |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| QUALIFIED LIFE - - -                                         |                                       |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| (YEARS):                                                     | 40                                    |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| REFERENCE:                                                   | 2,4                                   |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
|                                                              |                                       | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                  |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |





22-Mar-86

| EQUIPMENT DESCRIPTION                                        |  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------------------------------------|--|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                              |  | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                              |  |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CMS*TE52D                                        |  | OP. TIME:                                  | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.: C041D                                              |  | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                        |  | NORMAL                                     | 104/85             | 140 [R2]           | 1                  | 2, 4      | TEST-SIM       | NA             | NOTE 2  |
|                                                              |  | ABNORMAL                                   | 92                 | 190                | 1                  | 2, 4      | TEST-SIM       | NA             |         |
|                                                              |  | ACCIDENT                                   | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)                                          |  | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| RESISTANCE TEMPERATURE DETECTOR (RTD)                        |  | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                              |  | ABNORMAL                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO                                           |  | ACCIDENT                                   | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                              |  | RH (%)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:122-4030-04-2.7-82.3                               |  | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                              |  | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                                       |  | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                                                           |  | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                              |  | NORM GAMMA                                 | 7.7E5 [R2]         |                    | 1                  |           |                | NA             |         |
|                                                              |  | ACC GAMMA                                  | 1.0E8              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: B                                                  |  | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                              |  | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                              |  | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                              |  | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                                 |  | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/-1.2F NOTE 5                                         |  |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/-1.2F                                                |  |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC196114                                           |  |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                 |  |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                       |  |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                |  |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0580, CAT I |  |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                                         |  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)                                        |  |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                         |  |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                                  |  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2, 4                                              |  |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION                 |  |                                            |                    |                    |                    |           |                |                |         |

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3. OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.

4. TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.

5. FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.

6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.



QUAL REF #\_C041DAM REV 2

19-Feb-86

| EQUIPMENT DESCRIPTION                                           |                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------------------------------------------------|------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                 |                                          | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                 |                                          |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                      | 2CMS*TE53A                               |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.:                                                       | C041D                                    | OP.TIME:                                   | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SYSTEM:                                                         | CONTAINMENT<br>MONITORING SYSTEM         | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                 |                                          | NORMAL                                     | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                                                 |                                          | ABNORMAL                                   | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                             | RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | ACCIDENT                                   | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                 |                                          | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                 |                                          | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 |                                          | ABNORMAL                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                                   | PYCO                                     | ACCIDENT                                   | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                 |                                          | RH (%)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                                                      | 122-4030-04-2.7-82.3                     | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 |                                          | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                                | - - -                                    | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                                                              |                                          | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                 |                                          | NORM GAMMA                                 | 6.1E6              |                    | 1                  |           |                | NA             |         |
|                                                                 |                                          | ACC GAMMA                                  | 5.4E7              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                                       | B                                        | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                 |                                          | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                                 |                                          | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                 |                                          | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                                    |                                          | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                                                           | +/-1.2F NOTE 5                           |                                            |                    |                    |                    |           |                |                |         |
| DEMO:                                                           | +/-1.2F                                  |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                       | SC196116                                 |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                    |                                          |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                          |                                          |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY                |                                          |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588, CAT 1 |                                          |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                                            |                                          |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE:                                                      | 2 (NOTE 4)                               |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                            |                                          |                                            |                    |                    |                    |           |                |                |         |
| (YEARS):                                                        | 40                                       |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE:                                                      | 2,4                                      |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8
- SWEC CALCULATION NO. 12177-EQS-029

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.

4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.

5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.

6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.

[R2] INDICATES CHANGES MADE IN THIS REVISION



19-Feb-86

QUAL REF #\_C041DAN REV 2

| EQUIPMENT DESCRIPTION                                       |                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                    |                                                                                                                                                                                                                                            |                 |                    |           |             |             |         |
|-------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                             |                                       | PARAMETER                                                                                     | SPECIFIED VALUE                                                                                                                                                                                                                            | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                             |                                       |                                                                                               |                                                                                                                                                                                                                                            |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                                  | 2CMS*TE53B                            | OP.TIME:                                                                                      | NA                                                                                                                                                                                                                                         | >100 DAYS       | 3                  | 2         | AN+DATA     | YES         | NOTE 3  |
| SPEC NO.:                                                   | C041D                                 | TEMP (F):                                                                                     |                                                                                                                                                                                                                                            |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                                                     | CONTAINMENT MONITORING SYSTEM         | NORMAL                                                                                        | 104/85                                                                                                                                                                                                                                     | 140 [R2]        | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2  |
|                                                             |                                       | ABNORMAL                                                                                      | 92                                                                                                                                                                                                                                         | 190             | 1                  | 2,4       | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)                                         | RESISTANCE TEMPERATURE DETECTOR (RTD) | ACCIDENT                                                                                      | 175                                                                                                                                                                                                                                        | 400             | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                             |                                       | PRESS(PSIG)                                                                                   |                                                                                                                                                                                                                                            |                 |                    |           |             |             | NOTE 1  |
|                                                             |                                       | NORMAL                                                                                        | -0.25"WG                                                                                                                                                                                                                                   | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                             |                                       | ABNORMAL                                                                                      | -0.25"WG                                                                                                                                                                                                                                   | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                                               | PYCO                                  | ACCIDENT                                                                                      | 2.8                                                                                                                                                                                                                                        | 65 [R2]         | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                             |                                       | IRH (%)                                                                                       |                                                                                                                                                                                                                                            |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                                                  | 122-4030-04-2.7-82.3                  | NORMAL                                                                                        | 50                                                                                                                                                                                                                                         | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                             |                                       | ABNORMAL                                                                                      | 50                                                                                                                                                                                                                                         | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:                                            | - - -                                 | ACCIDENT                                                                                      | 100                                                                                                                                                                                                                                        | STEAM           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                             | NA                                    | RADIATION:                                                                                    |                                                                                                                                                                                                                                            |                 |                    |           |             |             | NOTE 1  |
|                                                             |                                       | NORM GAMMA                                                                                    | 6.1E6                                                                                                                                                                                                                                      |                 | 1                  |           |             | NA          |         |
|                                                             |                                       | ACC GAMMA                                                                                     | 5.4E7                                                                                                                                                                                                                                      | 2.2E8           | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                                                   | B                                     | NORM BETA                                                                                     | NA                                                                                                                                                                                                                                         |                 | 1                  |           |             | NA          |         |
|                                                             |                                       | ACC BETA                                                                                      | 6.1E6                                                                                                                                                                                                                                      |                 | 1                  |           |             | YES         |         |
|                                                             |                                       | NEUTRON                                                                                       | NA                                                                                                                                                                                                                                         |                 | 1                  |           |             | NA          |         |
|                                                             |                                       | SPRAY                                                                                         | NA                                                                                                                                                                                                                                         | YES             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY - -                                                |                                       | SUBMERGENCE                                                                                   | NA                                                                                                                                                                                                                                         | NA              | NA                 | NA        | NA          | NA          |         |
|                                                             | SPEC: +/-1.2F NOTE 5                  |                                                                                               |                                                                                                                                                                                                                                            |                 |                    |           |             |             |         |
|                                                             | DEMO: +/-1.2F                         |                                                                                               |                                                                                                                                                                                                                                            |                 |                    |           |             |             |         |
| ZONE NO.:                                                   | SC196116                              |                                                                                               |                                                                                                                                                                                                                                            |                 |                    |           |             |             |         |
| SUBMERGENCE:                                                |                                       | DOCUMENT REFERENCE:                                                                           | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |                 |                    |           |             |             |         |
| SPRAY:                                                      |                                       | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2] | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               |                                       | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |                 |                    |           |             |             |         |
|                                                             |                                       | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8                                     | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                                       | 4. SWEC CALCULATION NO. 12177-EQS-029                                                         | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |                 |                    |           |             |             |         |
|                                                             |                                       |                                                                                               | 6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.                                                                                                                                          |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                                        |                                       |                                                                                               |                                                                                                                                                                                                                                            |                 |                    |           |             |             |         |
| REFERENCE: 2 (NOTE 4)                                       |                                       |                                                                                               |                                                                                                                                                                                                                                            |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                                        |                                       |                                                                                               |                                                                                                                                                                                                                                            |                 |                    |           |             |             |         |
| (YEARS): 40                                                 |                                       |                                                                                               |                                                                                                                                                                                                                                            |                 |                    |           |             |             |         |
| REFERENCE: 2,4                                              |                                       |                                                                                               |                                                                                                                                                                                                                                            |                 |                    |           |             |             |         |
|                                                             |                                       | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                  |                                                                                                                                                                                                                                            |                 |                    |           |             |             |         |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          |                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                       |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |        |
|----------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------|--------|
|                                                                |                                          | PARAMETER                                                                                        | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                                                                                                                                                                            | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |        |
|                                                                |                                          |                                                                                                  |                    |                    | SPECIFIED          | QUALIFIED                                                                                                                                                                                                                                  |                |                |         |        |
| EQUIP NO.:                                                     | 2CMS*TE53C                               |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |        |
| SPEC NO.:                                                      | C041D                                    | OP.TIME:                                                                                         | NA                 | >100 DAYS          | 3                  | 2                                                                                                                                                                                                                                          | AN+DATA        | YES            |         | NOTE 3 |
| SYSTEM:                                                        | CONTAINMENT<br>MONITORING SYSTEM         | TEMP (F):                                                                                        | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | - - - - | NOTE 1 |
|                                                                |                                          | NORMAL                                                                                           | 104/85             | 140 [R2]           | 1                  | 2,4                                                                                                                                                                                                                                        | TEST-SIM       | NA             |         | NOTE 2 |
|                                                                |                                          | ABNORMAL                                                                                         | 92                 | 190                | 1                  | 2,4                                                                                                                                                                                                                                        | TEST-SIM       | NA             |         |        |
| TYPE: (DESCRIPTION)                                            | RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | ACCIDENT                                                                                         | 175                | 400                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | YES            |         |        |
|                                                                |                                          | PRESS (PSIG)                                                                                     | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | - - - - | NOTE 1 |
|                                                                |                                          | NORMAL                                                                                           | -0.25"WG           | ATMOS              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |        |
|                                                                |                                          | ABNORMAL                                                                                         | -0.25"WG           | ATMOS              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |        |
| MANUFACTURER:                                                  | PYCO                                     | ACCIDENT                                                                                         | 2.8                | 65 [R2]            | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | YES            |         |        |
|                                                                |                                          | RH (%):                                                                                          | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | - - - - | NOTE 1 |
| MODEL NO.:                                                     | 122-4030-04-2.7-82.3                     | NORMAL                                                                                           | 50                 | 100                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |        |
|                                                                |                                          | ABNORMAL                                                                                         | 50                 | 100                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |        |
| SAFETY FUNCTION:                                               | - - -                                    | ACCIDENT                                                                                         | 100                | STEAM              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |        |
| NA                                                             |                                          | RADIATION:                                                                                       | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | - - - - | NOTE 1 |
|                                                                |                                          | NORM GAMMA                                                                                       | 6.1E6              |                    | 1                  |                                                                                                                                                                                                                                            |                | NA             |         |        |
|                                                                |                                          | ACC GAMMA                                                                                        | 5.4E7              | 2.2E8              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | YES            |         |        |
| OP. CODE:                                                      | B                                        | NORM BETA                                                                                        | NA                 |                    | 1                  |                                                                                                                                                                                                                                            |                | NA             |         |        |
|                                                                |                                          | ACC BETA                                                                                         | 6.1E6              |                    | 1                  |                                                                                                                                                                                                                                            |                | YES            |         |        |
|                                                                |                                          | NEUTRON                                                                                          | NA                 |                    | 1                  |                                                                                                                                                                                                                                            |                | NA             |         |        |
|                                                                |                                          | SPRAY                                                                                            | NA                 | YES                | NA                 | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |        |
| ACCURACY - -                                                   |                                          | SUBMERGENCE                                                                                      | NA                 | NA                 | NA                 | NA                                                                                                                                                                                                                                         | NA             | NA             |         |        |
| SPEC:                                                          | +/-1.2F NOTE 5                           |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |        |
| DEMO:                                                          | +/-1.2F                                  |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |        |
| ZONE NO.:                                                      | SC196116                                 |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |        |
| SUBMERGENCE:                                                   |                                          | DOCUMENT REFERENCE:                                                                              |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |                |                |         |        |
| SPRAY:                                                         |                                          | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]    |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |                |                |         |        |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY               |                                          | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                   |                    |                    |                    | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |                |                |         |        |
|                                                                |                                          | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8                                        |                    |                    |                    | 4.TERMIAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                               |                |                |         |        |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                          | 4. SWEC CALCULATION NO. 12177-EQS-029                                                            |                    |                    |                    | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |                |                |         |        |
|                                                                |                                          | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT. |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |        |
| MAINT/SURVEILL - - -                                           |                                          |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |        |
| REFERENCE: 2 (NOTE 4)                                          |                                          |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |        |
| QUALIFIED LIFE - - -                                           |                                          |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |        |
| (YEARS): 40                                                    |                                          |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |        |
| REFERENCE: 2,4                                                 |                                          |                                                                                                  |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |        |
|                                                                |                                          | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                     |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |        |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                      | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                    |                    |                    |                    |                                                                                                                                                                                                                                             |                |                |         |
|--------------------------------|----------------------|-----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------|
|                                |                      | PARAMETER                                                                                     | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                                                                                                                                                                             | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                      |                                                                                               |                    |                    | SPECIFIED          | QUALIFIED                                                                                                                                                                                                                                   |                |                |         |
| EQUIP NO.:                     | 2CMS*TE53D           | OP.TIME:                                                                                      | NA                 | >100 DAYS          | 3                  | 2                                                                                                                                                                                                                                           | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                      | C041D                | TEMP (F):                                                                                     | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                     | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                        | CONTAINMENT          | NORMAL                                                                                        | 104/85             | 140 [R2]           | 1                  | 2,4                                                                                                                                                                                                                                         | TEST-SIM       | NA             | NOTE 2  |
|                                | MONITORING SYSTEM    | ABNORMAL                                                                                      | 92                 | 190                | 1                  | 2,4                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)            |                      | ACCIDENT                                                                                      | 175                | 400                | 1                  | 2                                                                                                                                                                                                                                           | TEST-SIM       | YES            |         |
| RESISTANCE TEMPERATURE         |                      | PRESS (PSIG)                                                                                  | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                     | - - - -        | - - - -        | NOTE 1  |
| DETECTOR (RTD)                 |                      | NORMAL                                                                                        | -0.25"WG           | ATMOS              | 1                  | 2                                                                                                                                                                                                                                           | TEST-SIM       | NA             |         |
|                                |                      | ABNORMAL                                                                                      | -0.25"WG           | ATMOS              | 1                  | 2                                                                                                                                                                                                                                           | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO             |                      | ACCIDENT                                                                                      | 2.8                | 65 [R2]            | 1                  | 2                                                                                                                                                                                                                                           | TEST-SIM       | YES            |         |
|                                |                      | RH (%):                                                                                       | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                     | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                     | 122-4030-04-2.7-82.3 | NORMAL                                                                                        | 50                 | 100                | 1                  | 2                                                                                                                                                                                                                                           | TEST-SIM       | NA             |         |
|                                |                      | ABNORMAL                                                                                      | 50                 | 100                | 1                  | 2                                                                                                                                                                                                                                           | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:               | - - -                | ACCIDENT                                                                                      | 100                | STEAM              | 1                  | 2                                                                                                                                                                                                                                           | TEST-SIM       | NA             |         |
| NA                             |                      | RADIATION:                                                                                    | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                     | - - - -        | - - - -        | NOTE 1  |
|                                |                      | NORM GAMMA                                                                                    | 6.1E6              |                    | 1                  |                                                                                                                                                                                                                                             |                | NA             |         |
|                                |                      | ACC GAMMA                                                                                     | 5.4E7              | 2.2E8              | 1                  | 2                                                                                                                                                                                                                                           | TEST-SIM       | YES            |         |
| OP. CODE:                      | B                    | NORM BETA                                                                                     | NA                 |                    | 1                  |                                                                                                                                                                                                                                             |                | NA             |         |
|                                |                      | ACC BETA                                                                                      | 6.1E6              |                    | 1                  |                                                                                                                                                                                                                                             |                | YES            |         |
|                                |                      | NEUTRON                                                                                       | NA                 |                    | 1                  |                                                                                                                                                                                                                                             |                | NA             |         |
|                                |                      | SPRAY                                                                                         | NA                 | YES                | NA                 | 2                                                                                                                                                                                                                                           | TEST-SIM       | NA             |         |
| ACCURACY - -                   |                      | SUBMERGENCE                                                                                   | NA                 | NA                 | NA                 | NA                                                                                                                                                                                                                                          | NA             | NA             |         |
| SPEC:                          | +/-1.2F NOTE 5       |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                             |                |                |         |
| DEMO:                          | +/-1.2F              |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                             |                |                |         |
| ZONE NO.:                      | SC196116             |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                             |                |                |         |
| SUBMERGENCE:                   |                      | DOCUMENT REFERENCE:                                                                           |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                |                |                |         |
| SPRAY:                         |                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2] |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                      |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                      | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                |                    |                    |                    | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                                |                |                |         |
| SUBMERGENCE OR SPRAY           |                      | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8                                     |                    |                    |                    | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                               |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                      | 4. SWEC CALCULATION NO. 12177-EQS-029                                                         |                    |                    |                    | 5. FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                      |                                                                                               |                    |                    |                    | 6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.                                                                                                                                           |                |                |         |
| MAINT/SURVEILL - - -           |                      |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                             |                |                |         |
| REFERENCE: 2 (NOTE 4)          |                      |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                             |                |                |         |
| QUALIFIED LIFE - - -           |                      |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                             |                |                |         |
| (YEARS): 40                    |                      |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                             |                |                |         |
| REFERENCE: 2,4                 |                      |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                             |                |                |         |
|                                |                      | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                  |                    |                    |                    |                                                                                                                                                                                                                                             |                |                |         |



ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |                                                 |                |                |         |
|--------------------------------|----------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-------------------------------------------------|----------------|----------------|---------|
|                                |                                  | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                 | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                                  |                                                 |                    |                    | SPECIFIED          | QUALIFIED                                       |                |                |         |
| EQUIP NO.:                     | 2CMS*TE54A                       | OP.TIME:                                        | NA                 | >100 DAYS          | 3                  | 2                                               | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                      | C041D                            | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -                                         | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                        | CONTAINMENT<br>MONITORING SYSTEM | NORMAL                                          | 120/85             | 140 [R2]           | 1                  | 2,4                                             | TEST-SIM       | NA             | NOTE 2  |
|                                |                                  | ABNORMAL                                        | 92                 | 190                | 1                  | 2,4                                             | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)            |                                  | ACCIDENT                                        | 175                | 400                | 1                  | 2                                               | TEST-SIM       | YES            |         |
| RESISTANCE TEMPERATURE         |                                  | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -                                         | - - - -        | - - - -        | NOTE 1  |
| DETECTOR (RTD)                 |                                  | NORMAL                                          | -0.25"WG           | ATMOS              | 1                  | 2                                               | TEST-SIM       | NA             |         |
|                                |                                  | ABNORMAL                                        | -0.25"WG           | ATMOS              | 1                  | 2                                               | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO             |                                  | ACCIDENT                                        | 2.8                | 65 [R2]            | 1                  | 2                                               | TEST-SIM       | YES            |         |
|                                |                                  | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -                                         | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                     | 122-4030-04-2.7-82.3             | NORMAL                                          | 50                 | 100                | 1                  | 2                                               | TEST-SIM       | NA             |         |
|                                |                                  | ABNORMAL                                        | 50                 | 100                | 1                  | 2                                               | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:               | - - -                            | ACCIDENT                                        | 100                | STEAM              | 1                  | 2                                               | TEST-SIM       | NA             |         |
| NA                             |                                  | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -                                         | - - - -        | - - - -        | NOTE 1  |
|                                |                                  | NORM GAMMA                                      | 2.1E4              |                    | 1                  |                                                 |                | NA             |         |
|                                |                                  | ACC GAMMA                                       | 1.6E7              | 2.2E8              | 1                  | 2                                               | TEST-SIM       | YES            |         |
| OP. CODE:                      | B                                | NORM BETA                                       | NA                 |                    | 1                  |                                                 |                | NA             |         |
|                                |                                  | ACC BETA                                        | 6.1E6              |                    | 1                  |                                                 |                | YES            |         |
|                                |                                  | NEUTRON                                         | NA                 |                    | 1                  |                                                 |                | NA             |         |
|                                |                                  | SPRAY                                           | NA                 | YES                | NA                 | 2                                               | TEST-SIM       | NA             |         |
| ACCURACY - -                   |                                  | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA                                              | NA             | NA             |         |
| SPEC:                          | +/-1.2F NOTE 5                   |                                                 |                    |                    |                    |                                                 |                |                |         |
| DEMO:                          | +/-1.2F                          |                                                 |                    |                    |                    |                                                 |                |                |         |
| ZONE NO.:                      | SC196117                         |                                                 |                    |                    |                    |                                                 |                |                |         |
| SUBMERGENCE:                   |                                  | DOCUMENT REFERENCE:                             |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |                |                |         |
| SPRAY:                         |                                  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    | SEE THE DOCUMENT REFERENCED.                    |                |                |         |
|                                |                                  | CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]   |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS              |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                                  | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    | MAX DESIGN/AVERAGE.                             |                |                |         |
| SUBMERGENCE OR SPRAY           |                                  | SDDF # IEEE-07-145-5003 B THRU G                |                    |                    |                    | 3.OPERABILITY PERIOD EXTENDED FROM 30           |                |                |         |
|                                |                                  | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    | DAYS TESTED VALUE TO 100 DAYS PLUS              |                |                |         |
|                                |                                  | FILE NO.33-2-C8                                 |                    |                    |                    | MARGIN BY ANALYSIS.                             |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                                  | 4. SWEC CALCULATION NO. 12177-EQS-029           |                    |                    |                    | 4.TERMINAL HEAD GASKET MUST BE REPLACED         |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                                  |                                                 |                    |                    |                    | WITH A NEW GASKET WHENEVER HEAD COVER           |                |                |         |
|                                |                                  |                                                 |                    |                    |                    | IS REMOVED, IN ORDER TO MAINTAIN                |                |                |         |
|                                |                                  |                                                 |                    |                    |                    | QUALIFICATION.                                  |                |                |         |
|                                |                                  |                                                 |                    |                    |                    | 5.FACTORY CERTIFICATION TESTING OF RTD'S        |                |                |         |
|                                |                                  |                                                 |                    |                    |                    | HAS DEMONSTRATED ACCURACY OF (+/-1.0 F          |                |                |         |
| MAINT/SURVEILL - - -           |                                  |                                                 |                    |                    |                    | THE QUALIFICATION TYPE TESTING HAS              |                |                |         |
| REFERENCE: 2 (NOTE 4)          |                                  |                                                 |                    |                    |                    | SHOWN AN ACCURACY OF +/-1.2 F.                  |                |                |         |
|                                |                                  |                                                 |                    |                    |                    | A REVIEW OF THE SETPOINT CALCULATIONS           |                |                |         |
| QUALIFIED LIFE - - -           |                                  |                                                 |                    |                    |                    | HAS SHOWN THAT +/-1.2F IS AN                    |                |                |         |
| (YEARS): 40                    |                                  |                                                 |                    |                    |                    | ACCEPTABLE ACCURACY.                            |                |                |         |
| REFERENCE: 2,4                 |                                  |                                                 |                    |                    |                    | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL           |                |                |         |
|                                |                                  |                                                 |                    |                    |                    | TO MAINTAIN QUALIFICATION. USE CONAX            |                |                |         |
|                                |                                  |                                                 |                    |                    |                    | "ECSA" OR EQUIVALENT.                           |                |                |         |
|                                |                                  | [R2] INDICATES CHANGES MADE IN THIS REVISION    |                    |                    |                    |                                                 |                |                |         |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          |                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
|----------------------------------------------------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                |                                          | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                     | 2CMS*TE54B                               | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                                      | C041D                                    | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                                        | CONTAINMENT<br>MONITORING SYSTEM         | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 120/85             | 140 [R2]           | 1                  | 2, 4      | TEST-SIM       | NA             | NOTE 2  |
|                                                                |                                          | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 92                 | 190                | 1                  | 2, 4      | TEST-SIM       | NA             |         |
|                                                                |                                          | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)                                            | RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | PRESS(PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                |                                          | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |                                          | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                                  | PYCO                                     | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
| MODEL NO.:                                                     | 122-4030-04-2.7-82.3                     | RH (%):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                |                                          | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |                                          | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                               | - - -                                    | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                                                             |                                          | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                |                                          | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2.1E4              |                    | 1                  |           |                | NA             |         |
|                                                                |                                          | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.6E7              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                                      | B                                        | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                |                                          | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                                |                                          | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                |                                          | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                                   |                                          | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                                                          | +/-1.2F NOTE 5                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| DEMO:                                                          | +/-1.2F                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                      | SC196117                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                   |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| SPRAY:                                                         |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY               |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2 (NOTE 4)                  |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2,4          |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
|                                                                |                                          | <p>DOCUMENT REFERENCE:</p> <p>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]</p> <p>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G</p> <p>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8</p> <p>4. SWEC CALCULATION NO. 12177-EQS-029</p> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.</p> <p>3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.</p> <p>4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.</p> <p>5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.</p> <p>6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.</p> |                    |                    |                    |           |                |                |         |
|                                                                |                                          | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                    |                    |           |                |                |         |



QUAL REF #\_C041DAS\_ REV 2

| EQUIPMENT DESCRIPTION                         |                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                 |                    |           |             |             |         |
|-----------------------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                               |                                       | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                               |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                    | 2CMS*TE54C                            | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NA              | >100 DAYS       | 3                  | 2         | AN+DATA     | YES         | NOTE 3  |
| SPEC NO.:                                     | C041D                                 | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                                       | CONTAINMENT MONITORING SYSTEM         | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 120/85          | 140 [R2]        | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2  |
|                                               |                                       | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 92              | 190             | 1                  | 2,4       | TEST-SIM    | NA          |         |
|                                               |                                       | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 175             | 400             | 1                  | 2         | TEST-SIM    | YES         |         |
| TYPE: (DESCRIPTION)                           | RESISTANCE TEMPERATURE DETECTOR (RTD) | PRESS(PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                 |                    |           |             |             | NOTE 1  |
|                                               |                                       | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                               |                                       | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                                 | PYCO                                  | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2.8             | 65 [R2]         | 1                  | 2         | TEST-SIM    | YES         |         |
| MODEL NO.:                                    | 122-4030-04-2.7-82.3                  | RH (%):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                 |                    |           |             |             | NOTE 1  |
|                                               |                                       | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                               |                                       | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:                              | ---                                   | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |         |
| NA                                            |                                       | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                 |                    |           |             |             | NOTE 1  |
|                                               |                                       | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2.1E4           |                 | 1                  |           |             | NA          |         |
|                                               |                                       | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.6E7           | 2.2E8           | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                                     | B                                     | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NA              |                 | 1                  |           |             | NA          |         |
|                                               |                                       | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 6.1E6           |                 | 1                  |           |             | YES         |         |
|                                               |                                       | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                               |                                       | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY --                                   |                                       | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                                         | +/-1.2F NOTE 5                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
| DEMO:                                         | +/-1.2F                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
| ZONE NO.:                                     | SC196117                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                  |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
| SPRAY:                                        |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                  |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL --                             |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
| REFERENCE:                                    | 2 (NOTE 4)                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE --                             |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
| (YEARS):                                      | 40                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
| REFERENCE:                                    | 2,4                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                 |                    |           |             |             |         |
|                                               |                                       | <p>DOCUMENT REFERENCE:</p> <p>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EGEDC-1, REV. 3, DEC. 20, 1985 [R2]</p> <p>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G</p> <p>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8</p> <p>4. SWEC CALCULATION NO. 12177-EQS-029</p> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.</p> <p>3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.</p> <p>4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.</p> <p>5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.</p> <p>6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.</p> |                 |                 |                    |           |             |             |         |
|                                               |                                       | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                 |                    |           |             |             |         |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CMS*TE54D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | OP.TIME:                                   | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.: C041D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NORMAL                                     | 120/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ABNORMAL                                   | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ACCIDENT                                   | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| RESISTANCE TEMPERATURE DETECTOR (RTD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ABNORMAL                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ACCIDENT                                   | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RH (%)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.: 122-4030-04-2.7-82.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NORM GAMMA                                 | 2.1E4              |                    | 1                  |           |                | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ACC GAMMA                                  | 1.6E7              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/-1.2F NOTE 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/-1.2F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC196117                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588, CAT I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                            |                    |                    |                    |           |                |                |         |
| <div style="display: flex; justify-content: space-between;"> <div> <p>[R2] INDICATES CHANGES MADE IN THIS REVISION</p> </div> <div> <p>NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.<br/> 2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.<br/> 3. OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.<br/> 4. TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.<br/> 5. FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.<br/> 6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.</p> </div> </div> |                                            |                    |                    |                    |           |                |                |         |



22-Mar-86

## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                        | DOCUMENT REFERENCE |                    |                    |           |           |                |                |         |
|--------------------------------|------------------------|--------------------|--------------------|--------------------|-----------|-----------|----------------|----------------|---------|
|                                |                        | PARAMETER          | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | SPECIFIED | QUALIFIED | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
| EQUIP NO.:                     | 2CMS*TE55A             |                    |                    |                    |           |           |                |                |         |
| SPEC NO.:                      | C041D                  | OP.TIME:           | NA                 | >100 DAYS          | 3         | 2         | AN+DATA        | YES            | NOTE 3  |
| SYSTEM:                        | CONTAINMENT            | TEMP (F):          | - - - -            | - - - -            | - - - -   | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                | MONITORING SYSTEM      | NORMAL             | 104/85             | 140 [R2]           | 1         | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                |                        | ABNORMAL           | 92                 | 190                | 1         | 2,4       | TEST-SIM       | NA             |         |
|                                |                        | ACCIDENT           | 175                | 400                | 1         | 2         | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)            | RESISTANCE TEMPERATURE | PRESS (PSIG)       | - - - -            | - - - -            | - - - -   | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                | DETECTOR (RTD)         | NORMAL             | -0.25"WG           | ATMOS              | 1         | 2         | TEST-SIM       | NA             |         |
|                                |                        | ABNORMAL           | -0.25"WG           | ATMOS              | 1         | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                  | PYCO                   | ACCIDENT           | 2.8                | 65 [R2]            | 1         | 2         | TEST-SIM       | YES            |         |
|                                |                        | RH (%):            | - - - -            | - - - -            | - - - -   | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                     | 122-4030-04-2.7-82.3   | NORMAL             | 50                 | 100                | 1         | 2         | TEST-SIM       | NA             |         |
|                                |                        | ABNORMAL           | 50                 | 100                | 1         | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:               | - - -                  | ACCIDENT           | 100                | STEAM              | 1         | 2         | TEST-SIM       | NA             |         |
| NA                             |                        | RADIATION:         | - - - -            | - - - -            | - - - -   | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                |                        | NORM GAMMA         | 6.1E6              |                    | 1         |           |                | NA             |         |
|                                |                        | ACC GAMMA          | 5.4E7              | 2.2E8              | 1         | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                      | B                      | NORM BETA          | NA                 |                    | 1         |           |                | NA             |         |
|                                |                        | ACC BETA           | 6.1E6              |                    | 1         |           |                | YES            |         |
|                                |                        | NEUTRON            | NA                 |                    | 1         |           |                | NA             |         |
|                                |                        | SPRAY              | NA                 | YES                | NA        | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                   |                        | SUBMERGENCE        | NA                 | NA                 | NA        | NA        | NA             | NA             |         |
| SPEC:                          | +/-1.2F NOTE 5         |                    |                    |                    |           |           |                |                |         |
| DEMO:                          | +/-1.2F                |                    |                    |                    |           |           |                |                |         |
| ZONE NO.:                      | SC196116               |                    |                    |                    |           |           |                |                |         |
| SUBMERGENCE:                   |                        |                    |                    |                    |           |           |                |                |         |
| SPRAY:                         |                        |                    |                    |                    |           |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                        |                    |                    |                    |           |           |                |                |         |
| SUBMERGENCE OR SPRAY           |                        |                    |                    |                    |           |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                        |                    |                    |                    |           |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                        |                    |                    |                    |           |           |                |                |         |
| MAINT/SURVEILL - - -           |                        |                    |                    |                    |           |           |                |                |         |
| REFERENCE: 2 (NOTE 4)          |                        |                    |                    |                    |           |           |                |                |         |
| QUALIFIED LIFE - - -           |                        |                    |                    |                    |           |           |                |                |         |
| (YEARS): 40                    |                        |                    |                    |                    |           |           |                |                |         |
| REFERENCE: 2,4                 |                        |                    |                    |                    |           |           |                |                |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION



22-Mar-86

QUAL REF #\_C041DAV REV 2

| EQUIPMENT DESCRIPTION                                           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                 | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                 |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CMS*TE55B                                           | OP.TIME:                                   | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.: C041D                                                 | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM: CONTAINMENT<br>MONITORING SYSTEM                        | NORMAL                                     | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                                                 | ABNORMAL                                   | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
|                                                                 | ACCIDENT                                   | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)<br>RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                 | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 | ABNORMAL                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO                                              | ACCIDENT                                   | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
| MODEL NO.: 122-4030-04-2.7-82.3                                 | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                 | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -<br>NA                                    | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                 | NORM GAMMA                                 | 6.1E6              |                    | 1                  |           |                | NA             |         |
|                                                                 | ACC GAMMA                                  | 5.4E7              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: B                                                     | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                 | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                                 | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
| ACCURACY - -                                                    | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| SPEC: +/-1.2F NOTE 5                                            | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| DEMO: +/-1.2F                                                   |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC196116                                              |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                    |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                          |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY                |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588, CAT 1 |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2 (NOTE 4)                   |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2,4           |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8
- SWEC CALCULATION NO. 12177-EQS-029

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.

4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.

5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.

6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.

[R2] INDICATES CHANGES MADE IN THIS REVISION



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       | PARAMETER    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|-------------------------------------------------------------|--------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                             |              |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2CMS*TESSC                                       | OP.TIME:     | NA              | >100 DAYS       | 3                  | 2         | AN+DATA     | YES         | NOTE 3  |
| SPEC NO.: C041D                                             | TEMP (F):    | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                       | NORMAL       | 104/85          | 140 [R2]        | 1                  | 2, 4      | TEST-SIM    | NA          | NOTE 2  |
|                                                             | ABNORMAL     | 92              | 190             | 1                  | 2, 4      | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)                                         | ACCIDENT     | 175             | 400             | 1                  | 2         | TEST-SIM    | YES         |         |
| RESISTANCE TEMPERATURE DETECTOR (RTD)                       | PRESS (PSIG) | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                                             | NORMAL       | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                             | ABNORMAL     | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: PYCO                                          | ACCIDENT     | 2.8             | 65 [R2]         | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                             | RH (%):      | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| MODEL NO.:122-4030-04-2.7-82.3                              | NORMAL       | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                             | ABNORMAL     | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -                                      | ACCIDENT     | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |         |
| NA                                                          | RADIATION:   | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                                             | NORM GAMMA   | 6.1E6           |                 | 1                  |           |             | NA          |         |
|                                                             | ACC GAMMA    | 5.4E7           | 2.2E8           | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE: B                                                 | NORM BETA    | NA              |                 | 1                  |           |             | NA          |         |
|                                                             | ACC BETA     | 6.1E6           |                 | 1                  |           |             | YES         |         |
|                                                             | NEUTRON      | NA              |                 | 1                  |           |             | NA          |         |
|                                                             | SPRAY        | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY --                                                 | SUBMERGENCE  | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: +/-1.2F NOTE 5                                        |              |                 |                 |                    |           |             |             |         |
| DEMO: +/-1.2F                                               |              |                 |                 |                    |           |             |             |         |
| ZONE NO.: SC196116                                          |              |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                                |              |                 |                 |                    |           |             |             |         |
| ISPRAY:                                                     |              |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               |              |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |              |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL --                                           |              |                 |                 |                    |           |             |             |         |
| REFERENCE: 2 (NOTE 4)                                       |              |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE --                                           |              |                 |                 |                    |           |             |             |         |
| (YEARS): 40                                                 |              |                 |                 |                    |           |             |             |         |
| REFERENCE: 2, 4                                             |              |                 |                 |                    |           |             |             |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.

4.TERMIAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.

5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.

6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       |                               | ENVIRONMENTAL CONDITIONS AND QUALIFICATION   |                    |                    |                    |           |                |                |         |
|-------------------------------------------------------------|-------------------------------|----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                             |                               | PARAMETER                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                             |                               |                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                  | 2CMS*TE55D                    | OP.TIME:                                     | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                                   | C041D                         | TEMP (F):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                                     | CONTAINMENT MONITORING SYSTEM | NORMAL                                       | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                                             |                               | ABNORMAL                                     | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                         |                               | ACCIDENT                                     | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
| RESISTANCE TEMPERATURE DETECTOR (RTD)                       |                               | PRESS (PSIG)                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                             |                               | NORMAL                                       | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                             |                               | ABNORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO                                          |                               | ACCIDENT                                     | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                             |                               | RH (%):                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:122-4030-04-2.7-82.3                              |                               | NORMAL                                       | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                             |                               | ABNORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                                      |                               | ACCIDENT                                     | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                                                          |                               | RADIATION:                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                             |                               | NORM GAMMA                                   | 6.1E6              |                    | 1                  |           |                | NA             |         |
|                                                             |                               | ACC GAMMA                                    | 5.4E7              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: B                                                 |                               | NORM BETA                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                             |                               | ACC BETA                                     | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                             |                               | NEUTRON                                      | NA                 |                    | 1                  |           |                | NA             |         |
|                                                             |                               | SPRAY                                        | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                                |                               | SUBMERGENCE                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/-1.2F NOTE 5                                        |                               |                                              |                    |                    |                    |           |                |                |         |
| DEMO: +/-1.2F                                               |                               |                                              |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                   | SC196116                      |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                |                               |                                              |                    |                    |                    |           |                |                |         |
| SPRAY:                                                      |                               |                                              |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               |                               |                                              |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                               |                                              |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                                        |                               |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)                                       |                               |                                              |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                        |                               |                                              |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                                 |                               |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                                              |                               |                                              |                    |                    |                    |           |                |                |         |
|                                                             |                               | [R2] INDICATES CHANGES MADE IN THIS REVISION |                    |                    |                    |           |                |                |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.

4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.

5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.

6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                           |                                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION   |                    |                    |                    |           |                |                |         |
|-----------------------------------------------------------------|----------------------------------|----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                 |                                  | PARAMETER                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                 |                                  |                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                      | 2CMS*TE56A                       | OP.TIME:                                     | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                                       | C041D                            | TEMP (F):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                                         | CONTAINMENT<br>MONITORING SYSTEM | NORMAL                                       | 104/85             | 140 [R2]           | 1                  | 2, 4      | TEST-SIM       | NA             | NOTE 2  |
|                                                                 |                                  | ABNORMAL                                     | 92                 | 190                | 1                  | 2, 4      | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                             |                                  | ACCIDENT                                     | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
| RESISTANCE TEMPERATURE<br>DETECTOR (RTD)                        |                                  | PRESS (PSIG)                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                 |                                  | NORMAL                                       | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 |                                  | ABNORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO                                              |                                  | ACCIDENT                                     | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                 |                                  | RH (%):                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                                                      | 122-4030-04-2.7-82.3             | NORMAL                                       | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 |                                  | ABNORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                                          |                                  | ACCIDENT                                     | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                                                              |                                  | RADIATION:                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                 |                                  | NORM GAMMA                                   | 6.1E6              |                    | 1                  |           |                | NA             |         |
|                                                                 |                                  | ACC GAMMA                                    | 5.4E7              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: B                                                     |                                  | NORM BETA                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                 |                                  | ACC BETA                                     | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                                 |                                  | NEUTRON                                      | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                 |                                  | SPRAY                                        | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                                    |                                  | SUBMERGENCE                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                                                           | +/-1.2F NOTE 5                   |                                              |                    |                    |                    |           |                |                |         |
| DEMO:                                                           | +/-1.2F                          |                                              |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                       | SC196116                         |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                    |                                  |                                              |                    |                    |                    |           |                |                |         |
| SPRAY:                                                          |                                  |                                              |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY                |                                  |                                              |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588, CAT I |                                  |                                              |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                                            |                                  |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)                                           |                                  |                                              |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                            |                                  |                                              |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                                     |                                  |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2, 4                                                 |                                  |                                              |                    |                    |                    |           |                |                |         |
|                                                                 |                                  | [R2] INDICATES CHANGES MADE IN THIS REVISION |                    |                    |                    |           |                |                |         |

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

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6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION           |                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION   |                    |                    |                    |           |                |                |         |
|---------------------------------|------------------------|----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 |                        | PARAMETER                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                        |                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| =====                           |                        | =====                                        | =====              | =====              | =====              | =====     | =====          | =====          | =====   |
| EQUIP NO.:                      | 2CMS*TE56B             | OP. TIME:                                    | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                       | C041D                  | TEMP (F):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                         | CONTAINMENT            | NORMAL                                       | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                 | MONITORING SYSTEM      | ABNORMAL                                     | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)             | RESISTANCE TEMPERATURE | ACCIDENT                                     | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                 | DETECTOR (RTD)         | PRESS (PSIG)                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                 |                        | NORMAL                                       | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 |                        | ABNORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                   | PYCO                   | ACCIDENT                                     | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                 |                        | RH (%):                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                      | 122-4030-04-2.7-82.3   | NORMAL                                       | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 |                        | ABNORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                | - - -                  | ACCIDENT                                     | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                              |                        | RADIATION:                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                 |                        | NORM GAMMA                                   | 6.1E6              |                    | 1                  |           |                | NA             |         |
|                                 |                        | ACC GAMMA                                    | 5.4E7              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                       | B                      | NORM BETA                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 |                        | ACC BETA                                     | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                 |                        | NEUTRON                                      | NA                 |                    | 1                  |           |                | NA             |         |
|                                 |                        | SPRAY                                        | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                    |                        | SUBMERGENCE                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/-1.2F NOTE 5            |                        | =====                                        |                    |                    |                    |           |                |                |         |
| DEMO: +/-1.2F                   |                        | =====                                        |                    |                    |                    |           |                |                |         |
| =====                           |                        | =====                                        |                    |                    |                    |           |                |                |         |
| ZONE NO.:                       | SC196116               |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                    |                        |                                              |                    |                    |                    |           |                |                |         |
| SPRAY:                          |                        |                                              |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                        |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |                        |                                              |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                        |                                              |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                        |                                              |                    |                    |                    |           |                |                |         |
| =====                           |                        |                                              |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |                        |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)           |                        |                                              |                    |                    |                    |           |                |                |         |
| =====                           |                        |                                              |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                        |                                              |                    |                    |                    |           |                |                |         |
| (YEARS): 40                     |                        |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                  |                        |                                              |                    |                    |                    |           |                |                |         |
| =====                           |                        |                                              |                    |                    |                    |           |                |                |         |
|                                 |                        | [R2] INDICATES CHANGES MADE IN THIS REVISION |                    |                    |                    |           |                |                |         |

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

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## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                        |                   | PARAMETER    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|----------------------------------------------|-------------------|--------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                              |                   |              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                   | 2CMS*TE56C        | OP.TIME:     | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                    | C041D             | TEMP (F):    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                      | CONTAINMENT       | NORMAL       | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                              | MONITORING SYSTEM | ABNORMAL     | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                          |                   | ACCIDENT     | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
| RESISTANCE TEMPERATURE                       |                   | PRESS (PSIG) | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| DETECTOR (RTD)                               |                   | NORMAL       | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                              |                   | ABNORMAL     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO                           |                   | ACCIDENT     | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                              |                   | RH (%):      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.: 122-4030-04-2.7-82.3              |                   | NORMAL       | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                              |                   | ABNORMAL     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                       |                   | ACCIDENT     | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                                           |                   | RADIATION:   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                              |                   | NORM GAMMA   | 6.1E6              |                    | 1                  |           |                | NA             |         |
|                                              |                   | ACC GAMMA    | 5.4E7              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: B                                  |                   | NORM BETA    | NA                 |                    | 1                  |           |                | NA             |         |
|                                              |                   | ACC BETA     | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                              |                   | NEUTRON      | NA                 |                    | 1                  |           |                | NA             |         |
|                                              |                   | SPRAY        | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                 |                   | SUBMERGENCE  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/-1.2F NOTE 5                         |                   |              |                    |                    |                    |           |                |                |         |
| DEMO: +/-1.2F                                |                   |              |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC196116                           |                   |              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                 |                   |              |                    |                    |                    |           |                |                |         |
| SPRAY:                                       |                   |              |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO                     |                   |              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY                         |                   |              |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                 |                   |              |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I              |                   |              |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                         |                   |              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)                        |                   |              |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                         |                   |              |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                  |                   |              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                               |                   |              |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION |                   |              |                    |                    |                    |           |                |                |         |

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## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION           |                      | ENVIRONMENTAL CONDITIONS AND QUALIFICATION   |                    |                    |                    |           |                |                |         |
|---------------------------------|----------------------|----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 |                      | PARAMETER                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
| =====                           |                      | =====                                        | =====              | =====              | SPECIFIED          | QUALIFIED | =====          | =====          | =====   |
| EQUIP NO.:                      | 2CMS*TE56D           | OP. TIME:                                    | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                       | C041D                | TEMP (F):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                         | CONTAINMENT          | NORMAL                                       | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                 | MONITORING SYSTEM    | ABNORMAL                                     | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
|                                 |                      | ACCIDENT                                     | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)             |                      | PRESS (PSIG)                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| RESISTANCE TEMPERATURE          |                      | NORMAL                                       | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| DETECTOR (RTD)                  |                      | ABNORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO              |                      | ACCIDENT                                     | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                 |                      | RH (%):                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                      | 122-4030-04-2.7-82.3 | NORMAL                                       | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 |                      | ABNORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                | - - -                | ACCIDENT                                     | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                              |                      | RADIATION:                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                 |                      | NORM GAMMA                                   | 6.1E6              |                    | 1                  |           |                | NA             |         |
|                                 |                      | ACC GAMMA                                    | 5.4E7              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                       | B                    | NORM BETA                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 |                      | ACC BETA                                     | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                 |                      | NEUTRON                                      | NA                 |                    | 1                  |           |                | NA             |         |
|                                 |                      | SPRAY                                        | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                    |                      | SUBMERGENCE                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                           | +/-1.2F NOTE 5       | =====                                        |                    |                    |                    |           |                |                |         |
| DEMO:                           | +/-1.2F              |                                              |                    |                    |                    |           |                |                |         |
| ZONE NO.:                       | SC196116             |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                    |                      |                                              |                    |                    |                    |           |                |                |         |
| SPRAY:                          |                      |                                              |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                      |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |                      |                                              |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                      |                                              |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                      |                                              |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |                      |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)           |                      |                                              |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                      |                                              |                    |                    |                    |           |                |                |         |
| (YEARS): 40                     |                      |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                  |                      |                                              |                    |                    |                    |           |                |                |         |
|                                 |                      | [R2] INDICATES CHANGES MADE IN THIS REVISION |                    |                    |                    |           |                |                |         |

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6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.



QUAL REF # C041DBC REV 2

22-Mar-86

[illegible]



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          |                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|----------------------------------------------------------------|------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                |                                          | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
| =====                                                          |                                          | =====                                      | =====              | =====              | SPECIFIED          | QUALIFIED | =====          | =====          | =====   |
| EQUIP NO.:                                                     | 2CMS*TE57B                               | OP.TIME:                                   | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                                      | C041D                                    | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                                        | CONTAINMENT<br>MONITORING SYSTEM         | NORMAL                                     | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                                                |                                          | ABNORMAL                                   | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                            | RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | ACCIDENT                                   | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                |                                          | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                |                                          | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |                                          | ABNORMAL                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                                  | PYCO                                     | ACCIDENT                                   | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                |                                          | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                                                     | 122-4030-04-2.7-82.3                     | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |                                          | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                               | - - -                                    | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                                                             |                                          | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                |                                          | NORM GAMMA                                 | 7.7E5              |                    | 1                  |           |                | NA             |         |
|                                                                |                                          | ACC GAMMA                                  | 4.4E7              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                                      | B                                        | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                |                                          | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                                |                                          | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                |                                          | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                                   |                                          | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                                                          | +/-1.2F NOTE 5                           | =====                                      |                    |                    |                    |           |                |                |         |
| DEMO:                                                          | +/-1.2F                                  |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                      | SC196120                                 |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                   |                                          |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                         |                                          |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY               |                                          |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                          |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                                           |                                          |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE:                                                     | 2 (NOTE 4)                               |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                           |                                          |                                            |                    |                    |                    |           |                |                |         |
| (YEARS):                                                       | 40                                       |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE:                                                     | 2,4                                      |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION                   |                                          |                                            |                    |                    |                    |           |                |                |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.

4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.

5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.

6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                        |                      | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                        |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
|----------------------------------------------|----------------------|---------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------|
|                                              |                      | PARAMETER                                                                                         | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                                                                                                                                                                            | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
| SPECIFIED                                    | QUALIFIED            |                                                                                                   |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| =====                                        |                      | =====                                                                                             | =====              | =====              | =====              | =====                                                                                                                                                                                                                                      | =====          | =====          | =====   |
| EQUIP NO.:                                   | 2CMS*TE57C           | OP.TIME:                                                                                          | NA                 | >100 DAYS          | 3                  | 2                                                                                                                                                                                                                                          | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                    | C041D                | TEMP (F):                                                                                         | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                      | CONTAINMENT          | NORMAL                                                                                            | 104/85             | 140 [R2]           | 1                  | 2,4                                                                                                                                                                                                                                        | TEST-SIM       | NA             | NOTE 2  |
|                                              | MONITORING SYSTEM    | ABNORMAL                                                                                          | 92                 | 190                | 1                  | 2,4                                                                                                                                                                                                                                        | TEST-SIM       | NA             |         |
|                                              |                      | ACCIDENT                                                                                          | 175                | 400                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)                          |                      | PRESS (PSIG)                                                                                      | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | NOTE 1  |
| RESISTANCE TEMPERATURE                       |                      | NORMAL                                                                                            | -0.25"WG           | ATMOS              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
| DETECTOR (RTD)                               |                      | ABNORMAL                                                                                          | -0.25"WG           | ATMOS              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO                           |                      | ACCIDENT                                                                                          | 2.8                | 65 [R2]            | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | YES            |         |
| MODEL NO.:                                   | 122-4030-04-2.7-82.3 | RH (%):                                                                                           | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | NOTE 1  |
|                                              |                      | NORMAL                                                                                            | 50                 | 100                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
|                                              |                      | ABNORMAL                                                                                          | 50                 | 100                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                       |                      | ACCIDENT                                                                                          | 100                | STEAM              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
| NA                                           |                      | RADIATION:                                                                                        | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | NOTE 1  |
|                                              |                      | NORM GAMMA                                                                                        | 7.7E5              |                    | 1                  |                                                                                                                                                                                                                                            |                | NA             |         |
|                                              |                      | ACC GAMMA                                                                                         | 4.4E7              | 2.2E8              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | YES            |         |
| OP. CODE: B                                  |                      | NORM BETA                                                                                         | NA                 |                    | 1                  |                                                                                                                                                                                                                                            |                | NA             |         |
|                                              |                      | ACC BETA                                                                                          | 6.1E6              |                    | 1                  |                                                                                                                                                                                                                                            |                | YES            |         |
|                                              |                      | NEUTRON                                                                                           | NA                 |                    | 1                  |                                                                                                                                                                                                                                            |                | NA             |         |
|                                              |                      | SPRAY                                                                                             | NA                 | YES                | NA                 | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
| ACCURACY - -                                 |                      | SUBMERGENCE                                                                                       | NA                 | NA                 | NA                 | NA                                                                                                                                                                                                                                         | NA             | NA             |         |
| SPEC:                                        | +/-1.2F NOTE 5       | =====                                                                                             |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| DEMO:                                        | +/-1.2F              |                                                                                                   |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| ZONE NO.:                                    | SC196120             |                                                                                                   |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| SUBMERGENCE:                                 |                      | DOCUMENT REFERENCE:                                                                               |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |                |                |         |
| SPRAY:                                       |                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]     |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |                |                |         |
| EQUIPMENT NOT SUBJECT TO                     |                      | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                    |                    |                    |                    | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |                |                |         |
| SUBMERGENCE OR SPRAY                         |                      | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8                                         |                    |                    |                    | 4. TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                             |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                 |                      | 4. SWEC CALCULATION NO. 12177-EQS-029                                                             |                    |                    |                    | 5. FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT 1               |                      | 6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT. |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| MAINT/SURVEILL - - -                         |                      |                                                                                                   |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| REFERENCE: 2 (NOTE 4)                        |                      |                                                                                                   |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| QUALIFIED LIFE - - -                         |                      |                                                                                                   |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| (YEARS): 40                                  |                      |                                                                                                   |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| REFERENCE: 2,4                               |                      |                                                                                                   |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION |                      |                                                                                                   |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |





QUAL REF #\_C041DBF REV 2

22-Mar-86

| EQUIPMENT DESCRIPTION                                       |                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                    |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
|-------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             |                                       | PARAMETER                                                                                     | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                    |
|                                                             |                                       |                                                                                               |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                            |
| EQUIP NO.:                                                  | 2CMS*TE57D                            | OP.TIME:                                                                                      | NA              | >100 DAYS       | 3                  | 2         | AN+DATA     | YES         | NOTE 3                                                                                                                                                                                                                                     |
| SPEC NO.:                                                   | C041D                                 | TEMP (F):                                                                                     | NORMAL          | 104/85          | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 1                                                                                                                                                                                                                                     |
| SYSTEM:                                                     | CONTAINMENT MONITORING SYSTEM         | ABNORMAL                                                                                      | 92              | 190             | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2                                                                                                                                                                                                                                     |
| TYPE: (DESCRIPTION)                                         | RESISTANCE TEMPERATURE DETECTOR (RTD) | ACCIDENT                                                                                      | 175             | 400             | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
|                                                             |                                       | PRESS(PSIG)                                                                                   | NORMAL          | -0.25"WG        | 1                  | 2         | TEST-SIM    | NA          | NOTE 1                                                                                                                                                                                                                                     |
|                                                             |                                       | ABNORMAL                                                                                      | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| MANUFACTURER:                                               | PYCO                                  | ACCIDENT                                                                                      | 2.8             | 65 [R2]         | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
| MODEL NO.:                                                  | 122-4030-04-2.7-82.3                  | RH (%):                                                                                       | NORMAL          | 50              | 1                  | 2         | TEST-SIM    | NA          | NOTE 1                                                                                                                                                                                                                                     |
|                                                             |                                       | ABNORMAL                                                                                      | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| SAFETY FUNCTION:                                            | ---                                   | ACCIDENT                                                                                      | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| NA                                                          |                                       | RADIATION:                                                                                    | NORM GAMMA      | 7.7E5           | 1                  |           |             | NA          | NOTE 1                                                                                                                                                                                                                                     |
|                                                             |                                       | ACC GAMMA                                                                                     | 4.4E7           | 2.2E8           | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
| OP. CODE:                                                   | B                                     | NORM BETA                                                                                     | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                            |
|                                                             |                                       | ACC BETA                                                                                      | 6.1E6           |                 | 1                  |           |             | YES         |                                                                                                                                                                                                                                            |
|                                                             |                                       | NEUTRON                                                                                       | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                            |
| ACCURACY --                                                 |                                       | SPRAY                                                                                         | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
|                                                             |                                       | SUBMERGENCE                                                                                   | NA              | NA              | NA                 | NA        | NA          | NA          |                                                                                                                                                                                                                                            |
| SPEC:                                                       | +/-1.2F NOTE 5                        |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| DEMO:                                                       | +/-1.2F                               |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| ZONE NO.:                                                   | SC196120                              |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| SUBMERGENCE:                                                |                                       | DOCUMENT REFERENCE:                                                                           |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| SPRAY:                                                      |                                       | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2] |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               |                                       | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |
|                                                             |                                       | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8                                     |                 |                 |                    |           |             |             | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                                       | 4. SWEC CALCULATION NO. 12177-EQS-029                                                         |                 |                 |                    |           |             |             | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |
|                                                             |                                       |                                                                                               |                 |                 |                    |           |             |             | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
| MAINT/SURVEILL ---                                          |                                       |                                                                                               |                 |                 |                    |           |             |             | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.                                                                                                                                           |
| REFERENCE: 2 (NOTE 4)                                       |                                       |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| QUALIFIED LIFE ---                                          |                                       |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| (YEARS): 40                                                 |                                       |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
| REFERENCE: 2,4                                              |                                       |                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |
|                                                             |                                       | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                  |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                            |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|----------------------------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                                | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                                |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2CMS*TE58A                                          |                                            |                 |                 |                    |           |             |             |         |
| SPEC NO.: C041D                                                | OP.TIME:                                   | NA              | >100 DAYS       | 3                  | 2         | AN+DATA     | YES         | NOTE 3  |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                          | TEMP (F):                                  | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                                                | NORMAL                                     | 104/85          | 140 [R2]        | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2  |
|                                                                | ABNORMAL                                   | 92              | 190             | 1                  | 2,4       | TEST-SIM    | NA          |         |
|                                                                | ACCIDENT                                   | 175             | 400             | 1                  | 2         | TEST-SIM    | YES         |         |
| TYPE: (DESCRIPTION)                                            | PRESS(PSIG)                                | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| RESISTANCE TEMPERATURE DETECTOR (RTD)                          | NORMAL                                     | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                | ABNORMAL                                   | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: PYCO                                             | ACCIDENT                                   | 2.8             | 65 [R2]         | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                                | RH (%) :                                   | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| MODEL NO.: 122-4030-04-2.7-82.3                                | NORMAL                                     | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                | ABNORMAL                                   | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - - NA                                      | ACCIDENT                                   | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                | RADIATION:                                 | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                                                | NORM GAMMA                                 | 7.7E5 [R2]      |                 | 1                  |           |             | NA          |         |
|                                                                | ACC GAMMA                                  | 5.0E5           | 2.2E8           | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE: B                                                    | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                                                | ACC BETA                                   | 6.1E6           |                 | 1                  |           |             | YES         |         |
|                                                                | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                                                | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY -- SPEC: +/-1.2F NOTE 5<br>DEMO: +/-1.2F              | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ZONE NO.: SC196113                                             |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                                   |                                            |                 |                 |                    |           |             |             |         |
| SPRAY:                                                         |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                  |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL --<br>REFERENCE: 2 (NOTE 4)                     |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE --<br>(YEARS): 40<br>REFERENCE: 2,4             |                                            |                 |                 |                    |           |             |             |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION

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### NOTES:

- 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.
- 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
- 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.
- 4.TERMIAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.
- 5.Factory certification testing OF RTD'S HAS demonstrated accuracy OF <+-1.0 F THE qualification TYPE TESTING HAS shown AN ACCURACY OF +/-.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS shown THAT +/-.2F IS AN acceptable ACCURACY.
- 6.RTD requires qualified CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" or EQUIVALENT.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION           |                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 |                        | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                        |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                      | 2CMS*TE58B             |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.:                       | C041D                  | OP.TIME:                                   | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SYSTEM:                         | CONTAINMENT            | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                 | MONITORING SYSTEM      | NORMAL                                     | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                 |                        | ABNORMAL                                   | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)             | RESISTANCE TEMPERATURE | ACCIDENT                                   | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                 | DETECTOR (RTD)         | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                 |                        | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 |                        | ABNORMAL                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                   | PYCO                   | ACCIDENT                                   | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                 |                        | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                      | 122-4030-04-2.7-82.3   | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 |                        | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                | - - -                  | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                              |                        | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                 |                        | NORM GAMMA                                 | 7.7E5 [R2]         |                    | 1                  |           |                | NA             |         |
|                                 |                        | ACC GAMMA                                  | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                       | B                      | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                 |                        | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                 |                        | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 |                        | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                    |                        | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                           | +/-1.2F NOTE 5         |                                            |                    |                    |                    |           |                |                |         |
| DEMO:                           | +/-1.2F                |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                       | SC196113               |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                    |                        |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                          |                        |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |                        |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                        |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                        |                                            |                    |                    |                    |           |                |                |         |
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| MAINT/SURVEILL - - -            |                        |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)           |                        |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                        |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                     |                        |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                  |                        |                                            |                    |                    |                    |           |                |                |         |
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19-Feb-86

[ R2] INDICATES CHANGES MADE IN THIS REVISION





QUAL REF #\_C041DBJ\_ REV 2

19-Feb-86

| EQUIPMENT DESCRIPTION                                           |                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------------------------------------------------|------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                 |                                          | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                 |                                          |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                      | 2CMS*TE58D                               | OP. TIME:                                  | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                                       | C041D                                    | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM:                                                         | CONTAINMENT<br>MONITORING SYSTEM         | NORMAL                                     | 104/85             | 140 [R2]           | 1                  | 2, 4      | TEST-SIM       | NA             | NOTE 2  |
|                                                                 |                                          | ABNORMAL                                   | 92                 | 190                | 1                  | 2, 4      | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                             | RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | ACCIDENT                                   | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                 |                                          | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                 |                                          | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 |                                          | ABNORMAL                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                                   | PYCO                                     | ACCIDENT                                   | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                 |                                          | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                                                      | 122-4030-04-2.7-82.3                     | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 |                                          | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                                | - - -                                    | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                                                              |                                          | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                 |                                          | NORM GAMMA                                 | 17.7E5 [R2]        |                    | 1                  |           |                | NA             |         |
|                                                                 |                                          | ACC GAMMA                                  | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                                       | B                                        | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                 |                                          | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                                 |                                          | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                 |                                          | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                                    |                                          | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                                                           | +/-1.2F NOTE 5                           |                                            |                    |                    |                    |           |                |                |         |
| DEMO:                                                           | +/-1.2F                                  |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                       | SC196113                                 |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                    |                                          |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                          |                                          |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY                |                                          |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588, CAT I |                                          |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2 (NOTE 4)                   |                                          |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2, 4          |                                          |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8
- SWEC CALCULATION NO. 12177-EQS-029

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3. OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.

4. TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.

5. FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.

6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.

[R2] INDICATES CHANGES MADE IN THIS REVISION



ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CMS*TE59A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | OP.TIME:                                   | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.: C041D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | NORMAL                                     | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ABNORMAL                                   | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ACCIDENT                                   | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
| RESISTANCE TEMPERATURE DETECTOR (RTD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ABNORMAL                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ACCIDENT                                   | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.: 122-4030-04-2.7-82.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NORM GAMMA                                 | 7.7E5 [R2]         |                    | 1                  |           |                | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ACC GAMMA                                  | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/-1.2F NOTE 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/-1.2F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC196113                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                            |                    |                    |                    |           |                |                |         |
| <p>NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.</p> <p>3. OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.</p> <p>4. TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.</p> <p>5. FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF +/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.</p> <p>6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.</p> |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                            |                    |                    |                    |           |                |                |         |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                           |                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------------------------------------------------|------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                 |                                          | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                 |                                          |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                      | 2CMS*TE59B                               | OP. TIME:                                  | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                                       | C041D                                    | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                                         | CONTAINMENT<br>MONITORING SYSTEM         | NORMAL                                     | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                                                 |                                          | ABNORMAL                                   | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                             | RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | ACCIDENT                                   | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                 |                                          | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                 |                                          | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 |                                          | ABNORMAL                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                                   | PYCO                                     | ACCIDENT                                   | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                 |                                          | IRH (%)                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                                                      | 122-4030-04-2.7-82.3                     | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 |                                          | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                                | - - -                                    | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| NA                                                              |                                          | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                 |                                          | NORM GAMMA                                 | 7.7E5 [R2]         |                    | 1                  |           |                | NA             |         |
|                                                                 |                                          | ACC GAMMA                                  | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                                       | B                                        | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                 |                                          | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                                                 |                                          | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                 |                                          | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                                    |                                          | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                                                           | +/-1.2F NOTE 5                           |                                            |                    |                    |                    |           |                |                |         |
| DEMO:                                                           | +/-1.2F                                  |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                       | SC196113                                 |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                    |                                          |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                          |                                          |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY                |                                          |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588, CAT I |                                          |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                                            |                                          |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE:                                                      | 2 (NOTE 4)                               |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                            |                                          |                                            |                    |                    |                    |           |                |                |         |
| (YEARS):                                                        | 40                                       |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE:                                                      | 2,4                                      |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION                    |                                          |                                            |                    |                    |                    |           |                |                |         |

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3. OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.

4. TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.

5. FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF +/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.

6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION           |                   | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                    |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
|---------------------------------|-------------------|-----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |                   | PARAMETER                                                                                     | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                    |
|                                 |                   |                                                                                               |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                            |
| EQUIP NO.:                      | 2CMS*TE59C        | OP.TIME:                                                                                      | NA                 | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3                                                                                                                                                                                                                                     |
| SPEC NO.:                       | C041D             | TEMP (F):                                                                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                     |
| SYSTEM:                         | CONTAINMENT       | NORMAL                                                                                        | 104/85             | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                     |
|                                 | MONITORING SYSTEM | ABNORMAL                                                                                      | 92                 | 190                | 1                  | 2,4       | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| TYPE: (DESCRIPTION)             |                   | ACCIDENT                                                                                      | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                            |
| RESISTANCE TEMPERATURE          |                   | PRESS (PSIG)                                                                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                     |
| DETECTOR (RTD)                  |                   | NORMAL                                                                                        | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
|                                 |                   | ABNORMAL                                                                                      | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| MANUFACTURER: PYCO              |                   | ACCIDENT                                                                                      | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                            |
|                                 |                   | RH (%):                                                                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                     |
| MODEL NO.:122-4030-04-2.7-82.3  |                   | NORMAL                                                                                        | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
|                                 |                   | ABNORMAL                                                                                      | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| SAFETY FUNCTION: - - -          |                   | ACCIDENT                                                                                      | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| NA                              |                   | RADIATION:                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                     |
|                                 |                   | NORM GAMMA                                                                                    | 7.7E5 [R2]         |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                            |
|                                 |                   | ACC GAMMA                                                                                     | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                            |
| OP. CODE: B                     |                   | NORM BETA                                                                                     | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                            |
|                                 |                   | ACC BETA                                                                                      | 6.1E6              |                    | 1                  |           |                | YES            |                                                                                                                                                                                                                                            |
|                                 |                   | NEUTRON                                                                                       | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                            |
|                                 |                   | SPRAY                                                                                         | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| ACCURACY - -                    |                   | SUBMERGENCE                                                                                   | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                            |
| SPEC: +/-1.2F NOTE 5            |                   |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| DEMO: +/-1.2F                   |                   |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| ZONE NO.:                       | SC196113          |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| SUBMERGENCE:                    |                   | DOCUMENT REFERENCE:                                                                           |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |
| SPRAY:                          |                   | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2] |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |
| EQUIPMENT NOT SUBJECT TO        |                   | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                |                    |                    |                    |           |                |                | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |
| SUBMERGENCE OR SPRAY            |                   | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8                                     |                    |                    |                    |           |                |                | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |
| DOCUMENTATION ACCEPTABILITY:    |                   | 4. SWEC CALCULATION NO. 12177-EQS-029                                                         |                    |                    |                    |           |                |                | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
| ACCEPTABLE TO NUREG 0580, CAT I |                   |                                                                                               |                    |                    |                    |           |                |                | 6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.                                                                                                                                          |
| MAINT/SURVEILL - - -            |                   |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| REFERENCE: 2 (NOTE 4)           |                   |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| QUALIFIED LIFE - - -            |                   |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| (YEARS): 40                     |                   |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| REFERENCE: 2,4                  |                   |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
|                                 |                   | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |





ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       |                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                 |                    |                    |                    |                                                                                                                               |                |                |         |
|-------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------|
|                                                             |                                          | PARAMETER                                                                                                                                                                                                                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                                                               | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                             |                                          |                                                                                                                                                                                                                                            |                    |                    | SPECIFIED          | QUALIFIED                                                                                                                     |                |                |         |
| EQUIP NO.:                                                  | 2CMS*TE59D                               | OP.TIME:                                                                                                                                                                                                                                   | NA                 | >100 DAYS          | 3                  | 2                                                                                                                             | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                                   | C041D                                    | TEMP (F):                                                                                                                                                                                                                                  | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                       | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                                     | CONTAINMENT<br>MONITORING SYSTEM         | NORMAL                                                                                                                                                                                                                                     | 104/85             | 140 [R2]           | 1                  | 2, 4                                                                                                                          | TEST-SIM       | NA             | NOTE 2  |
|                                                             |                                          | ABNORMAL                                                                                                                                                                                                                                   | 92                 | 190                | 1                  | 2, 4                                                                                                                          | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                         | RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | ACCIDENT                                                                                                                                                                                                                                   | 175                | 400                | 1                  | 2                                                                                                                             | TEST-SIM       | YES            |         |
|                                                             |                                          | PRESS (PSIG)                                                                                                                                                                                                                               | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                       | - - - -        | - - - -        | NOTE 1  |
|                                                             |                                          | NORMAL                                                                                                                                                                                                                                     | -0.25"WG           | ATMOS              | 1                  | 2                                                                                                                             | TEST-SIM       | NA             |         |
|                                                             |                                          | ABNORMAL                                                                                                                                                                                                                                   | -0.25"WG           | ATMOS              | 1                  | 2                                                                                                                             | TEST-SIM       | NA             |         |
| MANUFACTURER:                                               | PYCO                                     | ACCIDENT                                                                                                                                                                                                                                   | 2.8                | 65 [R2]            | 1                  | 2                                                                                                                             | TEST-SIM       | YES            |         |
|                                                             |                                          | RH (X):                                                                                                                                                                                                                                    | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                       | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                                                  | 122-4030-04-2.7-82.3                     | NORMAL                                                                                                                                                                                                                                     | 50                 | 100                | 1                  | 2                                                                                                                             | TEST-SIM       | NA             |         |
|                                                             |                                          | ABNORMAL                                                                                                                                                                                                                                   | 50                 | 100                | 1                  | 2                                                                                                                             | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                            | - - -                                    | ACCIDENT                                                                                                                                                                                                                                   | 100                | STEAM              | 1                  | 2                                                                                                                             | TEST-SIM       | NA             |         |
| NA                                                          |                                          | RADIATION:                                                                                                                                                                                                                                 | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                       | - - - -        | - - - -        | NOTE 1  |
|                                                             |                                          | NORM GAMMA                                                                                                                                                                                                                                 | 7.7E5 [R2]         |                    | 1                  |                                                                                                                               |                | NA             |         |
|                                                             |                                          | ACC GAMMA                                                                                                                                                                                                                                  | 5.0E5              | 2.2E8              | 1                  | 2                                                                                                                             | TEST-SIM       | YES            |         |
| OP. CODE:                                                   | B                                        | NORM BETA                                                                                                                                                                                                                                  | NA                 |                    | 1                  |                                                                                                                               |                | NA             |         |
|                                                             |                                          | ACC BETA                                                                                                                                                                                                                                   | 6.1E6              |                    | 1                  |                                                                                                                               |                | YES            |         |
|                                                             |                                          | NEUTRON                                                                                                                                                                                                                                    | NA                 |                    | 1                  |                                                                                                                               |                | NA             |         |
|                                                             |                                          | SPRAY                                                                                                                                                                                                                                      | NA                 | YES                | NA                 | 2                                                                                                                             | TEST-SIM       | NA             |         |
| ACCURACY - -                                                |                                          | SUBMERGENCE                                                                                                                                                                                                                                | NA                 | NA                 | NA                 | NA                                                                                                                            | NA             | NA             |         |
| SPEC:                                                       | +/-1.2F NOTE 5                           |                                                                                                                                                                                                                                            |                    |                    |                    |                                                                                                                               |                |                |         |
| DEMO:                                                       | +/-1.2F                                  |                                                                                                                                                                                                                                            |                    |                    |                    |                                                                                                                               |                |                |         |
| ZONE NO.:                                                   | SC196113                                 |                                                                                                                                                                                                                                            |                    |                    |                    |                                                                                                                               |                |                |         |
| SUBMERGENCE:                                                |                                          | DOCUMENT REFERENCE:                                                                                                                                                                                                                        |                    |                    |                    |                                                                                                                               |                |                |         |
| SPRAY:                                                      |                                          | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                                                                                              |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                  |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               |                                          | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                                                                                             |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                        |                |                |         |
|                                                             |                                          | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C8                                                                                                                                                                                  |                    |                    |                    | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                  |                |                |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                                          | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                                                                                      |                    |                    |                    | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION. |                |                |         |
|                                                             |                                          | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |                    |                    |                    |                                                                                                                               |                |                |         |
| MAINT/SURVEILL - - -                                        |                                          | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.                                                                                                                                           |                    |                    |                    |                                                                                                                               |                |                |         |
| REFERENCE: 2 (NOTE 4)                                       |                                          |                                                                                                                                                                                                                                            |                    |                    |                    |                                                                                                                               |                |                |         |
| QUALIFIED LIFE - - -                                        |                                          |                                                                                                                                                                                                                                            |                    |                    |                    |                                                                                                                               |                |                |         |
| (YEARS): 40                                                 |                                          |                                                                                                                                                                                                                                            |                    |                    |                    |                                                                                                                               |                |                |         |
| REFERENCE: 2,4                                              |                                          |                                                                                                                                                                                                                                            |                    |                    |                    |                                                                                                                               |                |                |         |
|                                                             |                                          | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                                                                                               |                    |                    |                    |                                                                                                                               |                |                |         |



### ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



QUAL REF # C041DBP REV 2

24-Mar-86

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                                               | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                    |
|--------------------------------|-----------------------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|--------------------|
|                                |                                               | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS            |
|                                |                                               |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                    |
| EQUIP NO.:                     | 2CMS*TE68B                                    | OP.TIME:                                        | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3             |
| SPEC NO.:                      | C041D                                         | TEMP (F):                                       |                    |                    |                    |           |                |                |                    |
| SYSTEM:                        | CONTAINMENT<br>MONITORING SYSTEM              | NORMAL                                          | 150/135            | 150 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 1<br>NOTE 2,7 |
|                                |                                               | ABNORMAL                                        | 190                | 190                | 1                  | 2,4       | TEST-SIM       | NA             |                    |
|                                |                                               | ACCIDENT                                        | 270                | 400                | 1                  | 2         | TEST-SIM       | YES            |                    |
| TYPE: (DESCRIPTION)            | RESISTANCE TEMPERATURE<br>DETECTOR (RTD)      | PRESS (PSIG)                                    |                    |                    |                    |           |                |                | NOTE 1             |
|                                |                                               | NORMAL                                          | .5 TO 1.0          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                    |
|                                |                                               | ABNORMAL                                        | 2                  | 2                  | 1                  | 2,4       | AN+DATA        | NA             |                    |
| MANUFACTURER:                  | PYCO                                          | ACCIDENT                                        | 40                 | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                    |
|                                |                                               | RH (%):                                         |                    |                    |                    |           |                |                | NOTE 1             |
|                                |                                               | NORMAL                                          | 90                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                    |
|                                |                                               | ABNORMAL                                        | 90 [R2]            | 100                | 1                  | 2         | TEST-SIM       | NA             |                    |
| SAFETY FUNCTION:               | MONITOR SUPPRESSION POOL<br>WATER TEMPERATURE | ACCIDENT                                        | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                    |
|                                |                                               | RADIATION:                                      |                    |                    |                    |           |                |                | NOTE 1.            |
|                                |                                               | NORM GAMMA                                      |                    |                    |                    |           |                | NA             |                    |
|                                |                                               | ACC GAMMA                                       | 5.5E7              | 2.2E8              | 4                  | 2         | TEST-SIM       | YES            | NOTE 6             |
|                                |                                               | NORM BETA                                       |                    |                    |                    |           |                | NA             |                    |
|                                |                                               | ACC BETA                                        |                    |                    |                    |           |                | YES            |                    |
|                                |                                               | NEUTRON                                         |                    |                    |                    |           |                | NA             |                    |
|                                |                                               | SPRAY                                           | YES                | YES                | 1                  | 2         | TEST-SIM       | NA             |                    |
| ACCURACY --                    |                                               | SUBMERGENCE                                     | <2 SEC             | 10 SEC             | 1                  | 2,4       | AN + DATA      | NA             | NOTE 7             |
| SPEC:                          | +/-1.2F (NOTE 5)                              |                                                 |                    |                    |                    |           |                |                |                    |
| DEMO:                          | +/-1.2F                                       |                                                 |                    |                    |                    |           |                |                |                    |
| ZONE NO.:                      | PC215121                                      | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                |                    |
| SUBMERGENCE:                   | YES                                           | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                |                    |
| SPRAY:                         | YES                                           | CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]   |                    |                    |                    |           |                |                |                    |
|                                |                                               | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                |                    |
|                                |                                               | SDDF # IEEE-07-145-5003 B THRU G                |                    |                    |                    |           |                |                |                    |
|                                |                                               | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                |                    |
|                                |                                               | FILE NO.33-2-C9                                 |                    |                    |                    |           |                |                |                    |
|                                |                                               | 4. SWEC CALCULATION NO. 12177-EQS-029           |                    |                    |                    |           |                |                |                    |
| DOCUMENTATION ACCEPTABILITY:   |                                               | NOTES: (CONT.)                                  |                    |                    |                    |           |                |                |                    |
| ACCEPTABLE TO NUREG 0588,CAT I |                                               | 7.THE RTD THERMOWELL IS ALWAYS SUBMERGED        |                    |                    |                    |           |                |                |                    |
|                                |                                               | TO MEASURE SUPPRESSION POOL WATER TEM-          |                    |                    |                    |           |                |                |                    |
|                                |                                               | PERATURE. THE RTD TERMINATION HEAD COVER        |                    |                    |                    |           |                |                |                    |
|                                |                                               | IS SUBJECTED TO SUBMERGENCE FOR ONLY            |                    |                    |                    |           |                |                |                    |
|                                |                                               | 2 SECONDS.                                      |                    |                    |                    |           |                |                |                    |
| MAINT/SURVEILL --              |                                               | 8.RTD IS QUALIFIED TO OPERATE AT 150 DEG F.     |                    |                    |                    |           |                |                |                    |
| REFERENCE: 2 (NOTE 4)          |                                               | QUALIFIED LIFE IS BASED ON AN AVG TEMP          |                    |                    |                    |           |                |                |                    |
|                                |                                               | OF 140 DEG F.                                   |                    |                    |                    |           |                |                |                    |
| QUALIFIED LIFE --              |                                               |                                                 |                    |                    |                    |           |                |                |                    |
| (YEARS): 40                    |                                               |                                                 |                    |                    |                    |           |                |                |                    |
| REFERENCE: 2,4                 |                                               |                                                 |                    |                    |                    |           |                |                |                    |
|                                |                                               | [R2] INDICATES CHANGES MADE IN THIS REVISION    |                    |                    |                    |           |                |                |                    |

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.  
4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.  
5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.  
6.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 5.5E7 RADS.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                             |                 |                                                                                                                                                                                                                                            |                    |           |             |             |          |
|--------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------|-------------|-------------|----------|
|                                |                                       | PARAMETER                                                                                                                                                              | SPECIFIED VALUE | QUALIFIED VALUE                                                                                                                                                                                                                            | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS  |
|                                |                                       |                                                                                                                                                                        |                 |                                                                                                                                                                                                                                            | SPECIFIED          | QUALIFIED |             |             |          |
| EQUIP NO.:                     | 2CMS*TE68A                            | OP.TIME:                                                                                                                                                               | 100 DAYS        | >100 DAYS                                                                                                                                                                                                                                  | 3                  | 2         | AN+DATA     | YES         | NOTE 3   |
| SPEC NO.:                      | C041D                                 | TEMP (F):                                                                                                                                                              | - - - -         | - - - -                                                                                                                                                                                                                                    | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1   |
| SYSTEM:                        | CONTAINMENT MONITORING SYSTEM         | NORMAL                                                                                                                                                                 | 150/135         | 150 [R2]                                                                                                                                                                                                                                   | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2,7 |
|                                |                                       | ABNORMAL                                                                                                                                                               | 190             | 190                                                                                                                                                                                                                                        | 1                  | 2,4       | TEST-SIM    | NA          |          |
|                                |                                       | ACCIDENT                                                                                                                                                               | 270             | 400                                                                                                                                                                                                                                        | 1                  | 2         | TEST-SIM    | YES         |          |
| TYPE: (DESCRIPTION)            | RESISTANCE TEMPERATURE DETECTOR (RTD) | PRESS (PSIG)                                                                                                                                                           | - - - -         | - - - -                                                                                                                                                                                                                                    | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1   |
|                                |                                       | NORMAL                                                                                                                                                                 | .5 TO 1.0       | ATMOS                                                                                                                                                                                                                                      | 1                  | 2         | TEST-SIM    | NA          |          |
|                                |                                       | ABNORMAL                                                                                                                                                               | 2               | 2                                                                                                                                                                                                                                          | 1                  | 2,4       | AN+DATA     | NA          |          |
| MANUFACTURER:                  | PYCO                                  | ACCIDENT                                                                                                                                                               | 40              | 65 [R2]                                                                                                                                                                                                                                    | 1                  | 2         | TEST-SIM    | YES         |          |
|                                |                                       | RH (%):                                                                                                                                                                | - - - -         | - - - -                                                                                                                                                                                                                                    | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1   |
|                                |                                       | NORMAL                                                                                                                                                                 | 90              | 100                                                                                                                                                                                                                                        | 1                  | 2         | TEST-SIM    | NA          |          |
|                                |                                       | ABNORMAL                                                                                                                                                               | 90 [R2]         | 100                                                                                                                                                                                                                                        | 1                  | 2         | TEST-SIM    | NA          |          |
|                                |                                       | ACCIDENT                                                                                                                                                               | 100             | STEAM                                                                                                                                                                                                                                      | 1                  | 2         | TEST-SIM    | NA          |          |
| MODEL NO.:                     | 122-7039-314                          | RADIATION:                                                                                                                                                             | - - - -         | - - - -                                                                                                                                                                                                                                    | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1   |
|                                |                                       | NORM GAMMA                                                                                                                                                             |                 |                                                                                                                                                                                                                                            |                    |           |             | NA          |          |
|                                |                                       | ACC GAMMA                                                                                                                                                              | 5.5E7           | 2.2E8                                                                                                                                                                                                                                      | 4                  | 2         | TEST-SIM    | YES         | NOTE 6   |
|                                |                                       | NORM BETA                                                                                                                                                              |                 |                                                                                                                                                                                                                                            |                    |           |             | NA          |          |
|                                |                                       | ACC BETA                                                                                                                                                               |                 |                                                                                                                                                                                                                                            |                    |           |             | YES         |          |
|                                |                                       | NEUTRON                                                                                                                                                                |                 |                                                                                                                                                                                                                                            |                    |           |             | NA          |          |
|                                |                                       | SPRAY                                                                                                                                                                  | YES             | YES                                                                                                                                                                                                                                        | 1                  | 2         | TEST-SIM    | NA          |          |
| ACCURACY - -                   |                                       | SUBMERGENCE                                                                                                                                                            | <2 SEC          | 10 SEC                                                                                                                                                                                                                                     | 1                  | 2,4       | AN + DATA   | NA          | NOTE 7   |
| SPEC:                          | +/-1.2F (NOTE 5)                      |                                                                                                                                                                        |                 |                                                                                                                                                                                                                                            |                    |           |             |             |          |
| DEMO:                          | +/-1.2F                               |                                                                                                                                                                        |                 |                                                                                                                                                                                                                                            |                    |           |             |             |          |
| ZONE NO.:                      | PC215121                              | DOCUMENT REFERENCE:                                                                                                                                                    |                 | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |                    |           |             |             |          |
| SUBMERGENCE:                   | YES                                   | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 (R2                                                                           |                 | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |                    |           |             |             |          |
| SPRAY:                         | YES                                   | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                         |                 | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |                    |           |             |             |          |
|                                |                                       | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C9                                                                                                              |                 | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |                    |           |             |             |          |
|                                |                                       | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                  |                 | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |                    |           |             |             |          |
| DOCUMENTATION ACCEPTABILITY:   |                                       | NOTES: (CONT.)                                                                                                                                                         |                 | 6.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 5.5E7 RADS.                                                                    |                    |           |             |             |          |
| ACCEPTABLE TO NUREG 0588,CAT I |                                       | 7.THE RTD THERMOWELL IS ALWAYS SUBMERGED TO MEASURE SUPPRESSION POOL WATER TEMPERATURE. THE RTD TERMINATION HEAD COVER IS SUBJECTED TO SUBMERGENCE FOR ONLY 2 SECONDS. |                 |                                                                                                                                                                                                                                            |                    |           |             |             |          |
|                                |                                       | 8.RTD IS QUALIFIED TO OPERATE AT 150 DEG F. QUALIFIED LIFE IS BASED ON AN AVG TEMP OF 140 DEG F.                                                                       |                 |                                                                                                                                                                                                                                            |                    |           |             |             |          |
| MAINT/SURVEILL - - -           |                                       |                                                                                                                                                                        |                 |                                                                                                                                                                                                                                            |                    |           |             |             |          |
| REFERENCE: 2 (NOTE 4)          |                                       |                                                                                                                                                                        |                 |                                                                                                                                                                                                                                            |                    |           |             |             |          |
| QUALIFIED LIFE - - -           |                                       |                                                                                                                                                                        |                 |                                                                                                                                                                                                                                            |                    |           |             |             |          |
| (YEARS): 40                    |                                       |                                                                                                                                                                        |                 |                                                                                                                                                                                                                                            |                    |           |             |             |          |
| REFERENCE: 2,4                 |                                       |                                                                                                                                                                        |                 |                                                                                                                                                                                                                                            |                    |           |             |             |          |
|                                |                                       | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                           |                 |                                                                                                                                                                                                                                            |                    |           |             |             |          |





QUAL REF #\_C041DBR\_\_\_\_ REV 2

24-Mar-86

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                      | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                             |                 |                 |                    |     |             |             |          |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----|-------------|-------------|----------|
|                                            | PARAMETER                                                                                                                                                              | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |     | QUAL METHOD | MARGIN DEMO | REMARKS  |
| EQUIP NO.: 2CMS*TE68B                      | OP.TIME:                                                                                                                                                               | 100 DAYS        | >100 DAYS       | 3                  | 2   | AN+DATA     | YES         | NOTE 3   |
| SPEC NO.: C041D                            | TEMP (F):                                                                                                                                                              | 150/135         | 150 [R2]        | 1                  | 2,4 | TEST-SIM    | NA          | NOTE 1   |
| SYSTEM: CONTAINMENT MONITORING SYSTEM      | ABNORMAL:                                                                                                                                                              | 190             | 190             | 1                  | 2,4 | TEST-SIM    | NA          | NOTE 2,7 |
|                                            | ACCIDENT:                                                                                                                                                              | 270             | 400             | 1                  | 2   | TEST-SIM    | YES         |          |
| TYPE: (DESCRIPTION)                        | PRESS(PSIG)                                                                                                                                                            | -.5 TO 1.0      | ATMOS           | 1                  | 2   | TEST-SIM    | NA          | NOTE 1   |
| RESISTANCE TEMPERATURE DETECTOR (RTD)      | ABNORMAL:                                                                                                                                                              | 2               | 2               | 1                  | 2,4 | AN+DATA     | NA          |          |
| MANUFACTURER: PYCO                         | ACCIDENT:                                                                                                                                                              | 40              | 65 [R2]         | 1                  | 2   | TEST-SIM    | YES         |          |
|                                            | IRH (%):                                                                                                                                                               | 90              | 100             | 1                  | 2   | TEST-SIM    | NA          | NOTE 1   |
| MODEL NO.:122-7039-314                     | ABNORMAL:                                                                                                                                                              | 90 [R2]         | 100             | 1                  | 2   | TEST-SIM    | NA          |          |
| SAFETY FUNCTION: - - -                     | ACCIDENT:                                                                                                                                                              | 100             | STEAM           | 1                  | 2   | TEST-SIM    | NA          |          |
| MONITOR SUPPRESSION POOL WATER TEMPERATURE | RADIATION:                                                                                                                                                             |                 |                 |                    |     |             |             | NOTE 1   |
|                                            | NORM GAMMA:                                                                                                                                                            |                 |                 |                    |     |             | NA          |          |
|                                            | ACC GAMMA:                                                                                                                                                             | 5.5E7           | 2.2E8           | 4                  | 2   | TEST-SIM    | YES         | NOTE 6   |
| OP. CODE: A                                | NORM BETA:                                                                                                                                                             |                 |                 |                    |     |             | NA          |          |
|                                            | ACC BETA:                                                                                                                                                              |                 |                 |                    |     |             | YES         |          |
|                                            | NEUTRON                                                                                                                                                                |                 |                 |                    |     |             | NA          |          |
|                                            | SPRAY                                                                                                                                                                  | YES             | YES             | 1                  | 2   | TEST-SIM    | NA          |          |
| ACCURACY - -                               | SUBMERGENCE:                                                                                                                                                           | <2 SEC          | 10 SEC          | 1                  | 2,4 | AN + DATA   | NA          | NOTE 7   |
| SPEC: +/-1.2F (NOTE 5)                     |                                                                                                                                                                        |                 |                 |                    |     |             |             |          |
| DEMO: +/-1.2F                              |                                                                                                                                                                        |                 |                 |                    |     |             |             |          |
| ZONE NO.: PC215121                         | DOCUMENT REFERENCE:                                                                                                                                                    |                 |                 |                    |     |             |             |          |
| SUBMERGENCE: YES                           | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                          |                 |                 |                    |     |             |             |          |
| SPRAY: YES                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                         |                 |                 |                    |     |             |             |          |
|                                            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C9                                                                                                              |                 |                 |                    |     |             |             |          |
|                                            | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                  |                 |                 |                    |     |             |             |          |
| DOCUMENTATION ACCEPTABILITY:               | NOTES: (CONT.)                                                                                                                                                         |                 |                 |                    |     |             |             |          |
| ACCEPTABLE TO NUREG 0588,CAT I             | 7.THE RTD THERMOWELL IS ALWAYS SUBMERGED TO MEASURE SUPPRESSION POOL WATER TEMPERATURE. THE RTD TERMINATION HEAD COVER IS SUBJECTED TO SUBMERGENCE FOR ONLY 2 SECONDS. |                 |                 |                    |     |             |             |          |
| MAINT/SURVEILL - - -                       | 8.RTD IS QUALIFIED TO OPERATE AT 150 DEG F.. QUALIFIED LIFE IS BASED ON AN AVG TEMP OF 140 DEG F.                                                                      |                 |                 |                    |     |             |             |          |
| REFERENCE: 2 (NOTE 4)                      |                                                                                                                                                                        |                 |                 |                    |     |             |             |          |
| QUALIFIED LIFE - - -                       |                                                                                                                                                                        |                 |                 |                    |     |             |             |          |
| (YEARS): 40                                |                                                                                                                                                                        |                 |                 |                    |     |             |             |          |
| REFERENCE: 2,4                             |                                                                                                                                                                        |                 |                 |                    |     |             |             |          |
|                                            | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                           |                 |                 |                    |     |             |             |          |

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.  
4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.  
5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.  
6.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 5.5E7 RADS.



### ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                      |                               | PARAMETER                                                                                                                                                                | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                   |
|--------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            |                               |                                                                                                                                                                          |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                           |
| EQUIP NO.:                                 | 2CMS*TE69A                    | OP.TIME:                                                                                                                                                                 | 100 DAYS        | >100 DAYS       | 3                  | 2         | AN+DATA     | YES         | NOTE 3                                                                                                                                                                                                                                    |
| SPEC NO.:                                  | C041D                         | TEMP (F):                                                                                                                                                                |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                    |
| SYSTEM:                                    | CONTAINMENT MONITORING SYSTEM | NORMAL                                                                                                                                                                   | 150/135         | 140 [R2]        | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2                                                                                                                                                                                                                                    |
|                                            |                               | ABNORMAL                                                                                                                                                                 | 190             | 190             | 1                  | 2,4       | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
| TYPE: (DESCRIPTION)                        |                               | ACCIDENT                                                                                                                                                                 | 270             | 400             | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                           |
| RESISTANCE TEMPERATURE DETECTOR (RTD)      |                               | PRESS (PSIG)                                                                                                                                                             |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                    |
|                                            |                               | NORMAL                                                                                                                                                                   | .5 TO 1.0       | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
|                                            |                               | ABNORMAL                                                                                                                                                                 | 2               | 2               | 1                  | 2,4       | AN+DATA     | NA          |                                                                                                                                                                                                                                           |
| MANUFACTURER: PYCO                         |                               | ACCIDENT                                                                                                                                                                 | 40              | 65 [R2]         | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                           |
|                                            |                               | RH (%):                                                                                                                                                                  |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                    |
| MODEL NO.:122-7039-314                     |                               | NORMAL                                                                                                                                                                   | 90              | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
|                                            |                               | ABNORMAL                                                                                                                                                                 | 90 [R2]         | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
| SAFETY FUNCTION: - - -                     |                               | ACCIDENT                                                                                                                                                                 | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
| MONITOR SUPPRESSION POOL WATER TEMPERATURE |                               | RADIATION:                                                                                                                                                               |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                    |
|                                            |                               | NORM GAMMA                                                                                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
|                                            |                               | ACC GAMMA                                                                                                                                                                | 5.5E7           | 2.2E8           | 4                  | 2         | TEST-SIM    | YES         | NOTE 7                                                                                                                                                                                                                                    |
| OP. CODE: A                                |                               | NORM BETA                                                                                                                                                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
|                                            |                               | ACC BETA                                                                                                                                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
|                                            |                               | NEUTRON                                                                                                                                                                  |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
|                                            |                               | SPRAY                                                                                                                                                                    | YES             | YES             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
| ACCURACY - -                               |                               | SUBMERGENCE                                                                                                                                                              | <2 SEC          | 10 SEC          | 1                  | 2,4       | AN + DATA   | NA          | NOTE 8                                                                                                                                                                                                                                    |
| SPEC: +/-1.2F (NOTE 5)                     |                               |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| DEMO: +/-1.2F                              |                               |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| ZONE NO.:                                  | PC215121                      |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| SUBMERGENCE:                               | YES                           |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| SPRAY:                                     | YES                           |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
|                                            |                               | DOCUMENT REFERENCE:                                                                                                                                                      |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                              |
|                                            |                               | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                            |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                    |
|                                            |                               | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                           |                 |                 |                    |           |             |             | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS..                                                                                                                                             |
|                                            |                               | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C9                                                                                                                |                 |                 |                    |           |             |             | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                             |
|                                            |                               | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                    |                 |                 |                    |           |             |             | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF +/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
| DOCUMENTATION ACCEPTABILITY:               |                               | (NOTES: (CONT.)                                                                                                                                                          |                 |                 |                    |           |             |             | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.                                                                                                                                          |
| ACCEPTABLE TO NUREG 0588,CAT I             |                               | 17.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 5.5E7 RADS. |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
|                                            |                               |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| MAINT/SURVEILL - - -                       |                               | 18.THE RTD THERMOWELL IS ALWAYS SUBMERGED TO MEASURE SUPPRESSION POOL WATER TEMPERATURE. THE RTD TERMINATION HEAD COVER IS SUBJECTED TO SUBMERGENCE FOR ONLY 2 SECONDS.  |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| REFERENCE: 2 (NOTE 4)                      |                               |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| QUALIFIED LIFE - - -                       |                               |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| (YEARS): 40                                |                               |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| REFERENCE: 2,4                             |                               |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
|                                            |                               | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |



| EQUIPMENT DESCRIPTION                                                   | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |         |
|-------------------------------------------------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                         | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                         |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CMS*TE69B                                                   | OP. TIME:                                       | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.: C041D                                                         | TEMP (F):                                       | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
| SYSTEM: CONTAINMENT<br>MONITORING SYSTEM                                | NORMAL                                          | 150/135            | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                                                         | ABNORMAL                                        | 190                | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
|                                                                         | ACCIDENT                                        | 270                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)<br>RESISTANCE TEMPERATURE<br>DETECTOR (RTD)         | PRESS (PSIG)                                    | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                                                                         | NORMAL                                          | .5 TO 1.0          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                         | ABNORMAL                                        | 2                  | 2                  | 1                  | 2,4       | AN+DATA        | NA             |         |
| MANUFACTURER: PYCO                                                      | ACCIDENT                                        | 40                 | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                         | RH (%)                                          | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
| MODEL NO.: 122-7039-314                                                 | NORMAL                                          | 90                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                         | ABNORMAL                                        | 90 [R2]            | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -<br>MONITOR SUPPRESSION POOL<br>WATER TEMPERATURE | ACCIDENT                                        | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                         | RADIATION:                                      | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                                                                         | NORM GAMMA                                      | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      |         |
|                                                                         | ACC GAMMA                                       | 5.5E7              | 2.2E8              | 4                  | 2         | TEST-SIM       | YES            | NOTE 7  |
| OP. CODE: A                                                             | NORM BETA                                       | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      |         |
|                                                                         | ACC BETA                                        | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      |         |
|                                                                         | NEUTRON                                         | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      |         |
|                                                                         | SPRAY                                           | YES                | YES                | 1                  | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -<br>SPEC: +/-1.2F (NOTE 5)<br>DEMO: +/-1.2F                 | SUBMERGENCE                                     | <2 SEC             | 10 SEC             | 1                  | 2,4       | AN + DATA      | NA             | NOTE 8  |
| ZONE NO.: PC215121                                                      |                                                 |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: YES                                                        |                                                 |                    |                    |                    |           |                |                |         |
| SPRAY: YES                                                              |                                                 |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0580, CAT I         |                                                 |                    |                    |                    |           |                |                |         |
|                                                                         | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                |         |
|                                                                         | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                |         |
|                                                                         | CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]   |                    |                    |                    |           |                |                |         |
|                                                                         | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                |         |
|                                                                         | SDDF # IEEE-07-145-5003 B THRU G                |                    |                    |                    |           |                |                |         |
|                                                                         | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                |         |
|                                                                         | FILE NO. 33-2-C9                                |                    |                    |                    |           |                |                |         |
|                                                                         | 4. SWEC CALCULATION NO. 12177-EQS-029           |                    |                    |                    |           |                |                |         |
|                                                                         | NOTES: (CONT.)                                  |                    |                    |                    |           |                |                |         |
|                                                                         | 17. COMBINED RADIATION FOR GAMMA, BETA AND      |                    |                    |                    |           |                |                |         |
|                                                                         | NEUTRON FOR 40 YEARS OF QUALIFIED LIFE          |                    |                    |                    |           |                |                |         |
|                                                                         | PLUS ACCIDENT INCLUDING APPLICABLE              |                    |                    |                    |           |                |                |         |
|                                                                         | BETA REDUCTION AND NEUTRON CONVERSION           |                    |                    |                    |           |                |                |         |
|                                                                         | IS 5.5E7 RADS.                                  |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2 (NOTE 4)                           | 18. THE RTD THERMOWELL IS ALWAYS SUBMERGED      |                    |                    |                    |           |                |                |         |
|                                                                         | TO MEASURE SUPPRESSION POOL WATER TEM-          |                    |                    |                    |           |                |                |         |
|                                                                         | PERATURE. THE RTD TERMINATION HEAD COVER        |                    |                    |                    |           |                |                |         |
|                                                                         | IS SUBJECTED TO SUBMERGENCE FOR ONLY            |                    |                    |                    |           |                |                |         |
|                                                                         | 2 SECONDS.                                      |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2,4                   | [R2] INDICATES CHANGES MADE IN THIS REVISION    |                    |                    |                    |           |                |                |         |

- NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3. OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.  
4. TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.  
5. FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.  
6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.



19-Feb-86

| EQUIPMENT DESCRIPTION           |                                               | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
|---------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------|
|                                 |                                               | PARAMETER                                                                                                                                                                | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                                                                                                                                                                            | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                                               |                                                                                                                                                                          |                    |                    | SPECIFIED          | QUALIFIED                                                                                                                                                                                                                                  |                |                |         |
| EQUIP NO.:                      | 2CMS*TE70A                                    | OP.TIME:                                                                                                                                                                 | 100                | >100 DAYS          | 3                  | 2                                                                                                                                                                                                                                          | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                       | C041D                                         | TEMP (F):                                                                                                                                                                | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                         | CONTAINMENT<br>MONITORING SYSTEM              | NORMAL                                                                                                                                                                   | 150/135            | 140 [R2]           | 1                  | 2,4                                                                                                                                                                                                                                        | TEST-SIM       | NA             | NOTE 2  |
|                                 |                                               | ABNORMAL                                                                                                                                                                 | 190                | 190                | 1                  | 2,4                                                                                                                                                                                                                                        | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)             | RESISTANCE TEMPERATURE<br>DETECTOR (RTD)      | ACCIDENT                                                                                                                                                                 | 270                | 400                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | YES            |         |
|                                 |                                               | PRESS (PSIG)                                                                                                                                                             | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | - - - - |
|                                 |                                               | NORMAL                                                                                                                                                                   | .5 TO 1            | ATMOS              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
|                                 |                                               | ABNORMAL                                                                                                                                                                 | 2.0                | ATMOS              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
| MANUFACTURER:                   | PYCO                                          | ACCIDENT                                                                                                                                                                 | 40                 | 65 [R2]            | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | YES            |         |
|                                 |                                               | RH (%):                                                                                                                                                                  | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | NOTE 1  |
|                                 |                                               | NORMAL                                                                                                                                                                   | 90 [R2]            | 100                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
|                                 |                                               | ABNORMAL                                                                                                                                                                 | 90 [R2]            | 100                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
|                                 |                                               | ACCIDENT                                                                                                                                                                 | 100                | STEAM              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -          | MONITOR SUPPRESSION POOL<br>WATER TEMPERATURE | RADIATION:                                                                                                                                                               | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | NOTE 1  |
|                                 |                                               | NORM GAMMA                                                                                                                                                               |                    |                    | 1                  |                                                                                                                                                                                                                                            |                | NA             |         |
| OP. CODE:                       | A                                             | ACC GAMMA                                                                                                                                                                | 5.5E7              | 2.2E8              | 4                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | YES            | NOTE 7  |
|                                 |                                               | NORM BETA                                                                                                                                                                |                    |                    | 1                  |                                                                                                                                                                                                                                            |                | NA             |         |
|                                 |                                               | ACC BETA                                                                                                                                                                 |                    |                    | 1                  |                                                                                                                                                                                                                                            |                | YES            |         |
|                                 |                                               | NEUTRON                                                                                                                                                                  |                    |                    | 1                  |                                                                                                                                                                                                                                            |                | NA             |         |
| ACCURACY - -                    |                                               | SPRAY                                                                                                                                                                    | YES                | YES                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
|                                 |                                               | SUBMERGENCE                                                                                                                                                              | <2 SEC             | 10 SEC             | 1                  | 2,4                                                                                                                                                                                                                                        | NA             | NA             | NOTE 8  |
| SPEC:                           | +/-1.2F (NOTE 5)                              |                                                                                                                                                                          |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| DEMO:                           | +/-1.2F                                       |                                                                                                                                                                          |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| ZONE NO.:                       | PC215121                                      |                                                                                                                                                                          |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| SUBMERGENCE:                    | YES                                           |                                                                                                                                                                          |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| SPRAY:                          | YES                                           |                                                                                                                                                                          |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                                               |                                                                                                                                                                          |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                                               |                                                                                                                                                                          |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
|                                 |                                               | DOCUMENT REFERENCE:                                                                                                                                                      |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |                |                |         |
|                                 |                                               | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC. 20, 1985. [R2]                                                                            |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |                |                |         |
|                                 |                                               | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                           |                    |                    |                    | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |                |                |         |
|                                 |                                               | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C9                                                                                                                |                    |                    |                    | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |                |                |         |
|                                 |                                               | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                    |                    |                    |                    | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |                |                |         |
|                                 |                                               | NOTES: (CONT.)                                                                                                                                                           |                    |                    |                    | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.                                                                                                                                           |                |                |         |
|                                 |                                               | 17.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 5.5E7 RADS. |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
|                                 |                                               | 18.THE RTD THERMOWELL IS ALWAYS SUBMERGED TO MEASURE SUPPRESSION POOL WATER TEMPERATURE. THE TERMINATION HEAD COVER IS SUBJECT TO SUBMERGENCE FOR ONLY 2 SECONDS.        |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
|                                 |                                               | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                            |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| MAINT/SURVEILL - - -            |                                               |                                                                                                                                                                          |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| REFERENCE:                      | 2 (NOTE 4)                                    |                                                                                                                                                                          |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| QUALIFIED LIFE - - -            |                                               |                                                                                                                                                                          |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| (YEARS):                        | 40                                            |                                                                                                                                                                          |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| REFERENCE:                      | 2,4                                           |                                                                                                                                                                          |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                   | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                              |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
|--------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------|
|                                |                   | PARAMETER                                                                                                                                                               | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                                                                                                                                                                            | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                   |                                                                                                                                                                         |                    |                    | SPECIFIED          | QUALIFIED                                                                                                                                                                                                                                  |                |                |         |
| EQUIP NO.:                     | 2CMS*TE70B        | OP.TIME:                                                                                                                                                                | 100                | >100 DAYS          | 3                  | 2                                                                                                                                                                                                                                          | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                      | C041D             | TEMP (F):                                                                                                                                                               | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                        | CONTAINMENT       | NORMAL                                                                                                                                                                  | 150/135            | 140 [R2]           | 1                  | 2,4                                                                                                                                                                                                                                        | TEST-SIM       | NA             | NOTE 2  |
|                                | MONITORING SYSTEM | ABNORMAL                                                                                                                                                                | 190                | 190                | 1                  | 2,4                                                                                                                                                                                                                                        | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)            |                   | ACCIDENT                                                                                                                                                                | 270                | 400                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | YES            |         |
| RESISTANCE TEMPERATURE         |                   | PRESS (PSIG)                                                                                                                                                            | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | NOTE 1  |
| DETECTOR (RTD)                 |                   | NORMAL                                                                                                                                                                  | .5 TO 1            | ATMOS              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
|                                |                   | ABNORMAL                                                                                                                                                                | 2.0                | ATMOS              | 1                  | 2                                                                                                                                                                                                                                          | AN+DATA        | NA             |         |
| MANUFACTURER: PYCO             |                   | ACCIDENT                                                                                                                                                                | 40                 | 65 [R2]            | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | YES            |         |
|                                |                   | IRH (%)                                                                                                                                                                 | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:122-7039-314         |                   | NORMAL                                                                                                                                                                  | 90 [R2]            | 100                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
|                                |                   | ABNORMAL                                                                                                                                                                | 90 [R2]            | 100                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -         |                   | ACCIDENT                                                                                                                                                                | 100                | STEAM              | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
| MONITOR SUPPRESSION POOL       |                   | RADIATION:                                                                                                                                                              | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                    | - - - -        | - - - -        | NOTE 1  |
| WATER TEMPERATURE              |                   | NORM GAMMA                                                                                                                                                              |                    |                    | 1                  |                                                                                                                                                                                                                                            |                |                |         |
|                                |                   | ACC GAMMA                                                                                                                                                               | 5.5E7              | 2.2E8              | 4                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | YES            | NOTE 7  |
| OP. CODE: A                    |                   | NORM BETA                                                                                                                                                               |                    |                    | 1                  |                                                                                                                                                                                                                                            |                |                |         |
|                                |                   | ACC BETA                                                                                                                                                                |                    |                    | 1                  |                                                                                                                                                                                                                                            |                |                |         |
|                                |                   | NEUTRON                                                                                                                                                                 |                    |                    | 1                  |                                                                                                                                                                                                                                            |                |                |         |
|                                |                   | SPRAY                                                                                                                                                                   | YES                | YES                | 1                  | 2                                                                                                                                                                                                                                          | TEST-SIM       | NA             |         |
| ACCURACY - -                   |                   | SUBMERGENCE                                                                                                                                                             | <2 SEC             | 10 SEC             | 1                  | 2,4                                                                                                                                                                                                                                        | NA             | NA             | NOTE 8  |
| SPEC: +/-1.2F (NOTE 5)         |                   |                                                                                                                                                                         |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| DEMO: +/-1.2F                  |                   |                                                                                                                                                                         |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| ZONE NO.:                      | PC215121          |                                                                                                                                                                         |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| SUBMERGENCE: YES               |                   | DOCUMENT REFERENCE:                                                                                                                                                     |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |                |                |         |
| SPRAY: YES                     |                   | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC. 20, 1985. [R2]                                                                           |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |                |                |         |
|                                |                   | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                          |                    |                    |                    | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |                |                |         |
|                                |                   | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C9                                                                                                               |                    |                    |                    | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |                |                |         |
|                                |                   | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                   |                    |                    |                    | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                   |                                                                                                                                                                         |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| ACCEPTABLE TO NUREG 0500,CAT I |                   |                                                                                                                                                                         |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
|                                |                   | [NOTES: (CONT.)                                                                                                                                                         |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
|                                |                   | 17.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 5.5E7RADS. |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| MAINT/SURVEILL - - -           |                   | 18.THE RTD THERMOWELL IS ALWAYS SUBMERGED TO MEASURE SUPPRESSION POOL WATER TEMPERATURE. THE RTD TERMINATION HEAD COVER IS SUBJECT TO SUBMERGENCE FOR ONLY 2 SECONDS.   |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| REFERENCE: 2 (NOTE 4)          |                   |                                                                                                                                                                         |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| QUALIFIED LIFE - - -           |                   |                                                                                                                                                                         |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| (YEARS): 40                    |                   |                                                                                                                                                                         |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
| REFERENCE: 2,4                 |                   |                                                                                                                                                                         |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |
|                                |                   | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                           |                    |                    |                    |                                                                                                                                                                                                                                            |                |                |         |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION        |                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                               |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
|------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                              |                                          | PARAMETER                                                                                                                                                                | SPECIFIED<br>VALUE                                                                                                                                                                                                                        | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                              |                                          |                                                                                                                                                                          |                                                                                                                                                                                                                                           |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                   | 2CMS*TE101                               | OP.TIME:                                                                                                                                                                 | 100 DAYS                                                                                                                                                                                                                                  | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                    | C041D                                    | TEMP (F):                                                                                                                                                                | - - - -                                                                                                                                                                                                                                   | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                      | CONTAINMENT<br>MONITORING SYSTEM         | NORMAL                                                                                                                                                                   | 150/135                                                                                                                                                                                                                                   | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                              |                                          | ABNORMAL                                                                                                                                                                 | 190                                                                                                                                                                                                                                       | 190                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)          | RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | ACCIDENT                                                                                                                                                                 | 340                                                                                                                                                                                                                                       | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
|                              |                                          | PRESS (PSIG)                                                                                                                                                             | - - - -                                                                                                                                                                                                                                   | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                              |                                          | NORMAL                                                                                                                                                                   | .5 TO 1.0                                                                                                                                                                                                                                 | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                              |                                          | ABNORMAL                                                                                                                                                                 | 2                                                                                                                                                                                                                                         | 2                  | 1                  | 2,4       | AN+DATA        | NA             |         |
| MANUFACTURER:                | PYCO                                     | ACCIDENT                                                                                                                                                                 | 45                                                                                                                                                                                                                                        | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                              |                                          | RH (%) :                                                                                                                                                                 | - - - -                                                                                                                                                                                                                                   | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                   | 122-4030-04-2.7-6                        | NORMAL                                                                                                                                                                   | 90                                                                                                                                                                                                                                        | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                              |                                          | ABNORMAL                                                                                                                                                                 | 90 [R2]                                                                                                                                                                                                                                   | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:             | - - -                                    | ACCIDENT                                                                                                                                                                 | STEAM                                                                                                                                                                                                                                     | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
|                              | MONITOR DRYWELL AREA<br>TEMPERATURE [R1] | RADIATION:                                                                                                                                                               | - - - -                                                                                                                                                                                                                                   | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                              |                                          | NORM GAMMA                                                                                                                                                               |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
|                              |                                          | ACC GAMMA                                                                                                                                                                | 4.3E7                                                                                                                                                                                                                                     | 2.2E8              | 4                  | 2         | TEST-SIM       | YES            | NOTE 7  |
| OP. CODE:                    | A                                        | NORM BETA                                                                                                                                                                |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
|                              |                                          | ACC BETA                                                                                                                                                                 |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
|                              |                                          | NEUTRON                                                                                                                                                                  |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
|                              |                                          | SPRAY                                                                                                                                                                    | YES                                                                                                                                                                                                                                       | YES                | 1                  | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                 |                                          | SUBMERGENCE                                                                                                                                                              | NA                                                                                                                                                                                                                                        | NA                 | 1                  | NA        | NA             | NA             |         |
| SPEC:                        | +/-1.2F (NOTE 5)                         |                                                                                                                                                                          |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
| DEMO:                        | +/-1.2F                                  |                                                                                                                                                                          |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
| ZONE NO.:                    | PC306713                                 |                                                                                                                                                                          |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
| SUBMERGENCE:                 | YES                                      |                                                                                                                                                                          |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
| SPRAY:                       | YES                                      |                                                                                                                                                                          |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
|                              |                                          | DOCUMENT REFERENCE:                                                                                                                                                      | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                              |                    |                    |           |                |                |         |
|                              |                                          | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                            | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                    |                    |                    |           |                |                |         |
|                              |                                          | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                           | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                              |                    |                    |           |                |                |         |
|                              |                                          | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C12 [R2]                                                                                                          | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                             |                    |                    |           |                |                |         |
|                              |                                          | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                    | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF +/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY: | ACCEPTABLE TO NUREG 0580,CAT I           | (NOTES: (CONT.)                                                                                                                                                          | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.                                                                                                                                          |                    |                    |           |                |                |         |
|                              |                                          | 17.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 4.3E7 RADS. |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -         |                                          |                                                                                                                                                                          |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
| REFERENCE:                   | 2 (NOTE 4)                               |                                                                                                                                                                          |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -         |                                          |                                                                                                                                                                          |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
| (YEARS):                     | 40                                       |                                                                                                                                                                          |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
| REFERENCE:                   | 2,4                                      |                                                                                                                                                                          |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |
|                              |                                          | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                             |                                                                                                                                                                                                                                           |                    |                    |           |                |                |         |



QUAL REF #\_C041DBX\_ REV 2

24-Mar-86

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                              |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----|-------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             | PARAMETER                                                                                                                                                               | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |     | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                   |
| EQUIP NO.: 2CMS*TE102                                       | OP.TIME:                                                                                                                                                                | 100 DAYS        | >100 DAYS       | 3                  | 2   | AN+DATA     | YES         | NOTE 3                                                                                                                                                                                                                                    |
| SPEC NO.: C041D                                             | TEMP (F):                                                                                                                                                               |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                    |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                       | NORMAL                                                                                                                                                                  | 150/135         | 150 [R2]        | 1                  | 2,4 | TEST-SIM    | NA          | NOTE 2,7                                                                                                                                                                                                                                  |
|                                                             | ABNORMAL                                                                                                                                                                | 190             | 190             | 1                  | 2,4 | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
|                                                             | ACCIDENT                                                                                                                                                                | 340             | 400             | 1                  | 2   | TEST-SIM    | YES         |                                                                                                                                                                                                                                           |
| TYPE: (DESCRIPTION) RESISTANCE TEMPERATURE DETECTOR (RTD)   | PRESS(PSIG)                                                                                                                                                             |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                    |
|                                                             | NORMAL                                                                                                                                                                  | .5 TO 1.0       | ATMOS           | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
|                                                             | ABNORMAL                                                                                                                                                                | 2               | 2               | 1                  | 2,4 | AN+DATA     | NA          |                                                                                                                                                                                                                                           |
| MANUFACTURER: PYCO                                          | ACCIDENT                                                                                                                                                                | 45              | 65 [R2]         | 1                  | 2   | TEST-SIM    | YES         |                                                                                                                                                                                                                                           |
|                                                             | IRH (%)                                                                                                                                                                 |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                    |
| MODEL NO.: 122-4030-04-2.7-6                                | NORMAL                                                                                                                                                                  | 90              | 100             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
|                                                             | ABNORMAL                                                                                                                                                                | 90 [R2]         | 100             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
| SAFETY FUNCTION: - - - MONITOR DRYWELL AREA TEMPERATURE     | ACCIDENT                                                                                                                                                                | STEAM           | STEAM           | 1                  | 2   | TEST-SIM    | NA          | NOTE 1                                                                                                                                                                                                                                    |
|                                                             | RADIATION:                                                                                                                                                              |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
|                                                             | NORM GAMMA                                                                                                                                                              |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                           |
| OP. CODE: A                                                 | ACC GAMMA                                                                                                                                                               | 5.4E7           | 2.2E8           | 4                  | 2   | TEST-SIM    | YES         | NOTE 6                                                                                                                                                                                                                                    |
|                                                             | NORM BETA                                                                                                                                                               |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                           |
|                                                             | ACC BETA                                                                                                                                                                |                 |                 |                    |     |             | YES         |                                                                                                                                                                                                                                           |
|                                                             | NEUTRON                                                                                                                                                                 |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                           |
|                                                             | SPRAY                                                                                                                                                                   | YES             | YES             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
| ACCURACY - - -                                              | SUBMERGENCE                                                                                                                                                             | NA              | NA              | 1                  | NA  | NA          | NA          |                                                                                                                                                                                                                                           |
| SPEC: +/-1.2F (NOTE 5)                                      |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| DEMO: +/-1.2F                                               |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| ZONE NO.: PC289681                                          |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| SUBMERGENCE: NA                                             |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| SPRAY: YES                                                  |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I | DOCUMENT REFERENCE:                                                                                                                                                     |                 |                 |                    |     |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                              |
|                                                             | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                           |                 |                 |                    |     |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                    |
|                                                             | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                          |                 |                 |                    |     |             |             | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                              |
|                                                             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C12                                                                                                              |                 |                 |                    |     |             |             | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                             |
|                                                             | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                   |                 |                 |                    |     |             |             | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
|                                                             | NOTES: (CONT.)                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
|                                                             | 6.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 5.4E7 RADS. |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| MAINT/SURVEILL - - -                                        | 7.RTD IS QUALIFIED TO OPERATE AT 150 DEGREES F                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| REFERENCE: 2 (NOTE 4)                                       | QUALIFIED LIFE IS BASED ON AN AVERAGE TEMPERATURE OF 140 DEGREES F.                                                                                                     |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| QUALIFIED LIFE - - -                                        |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| (YEARS): 40                                                 |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| REFERENCE: 2,4                                              |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
|                                                             | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                            |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |



QUAL REF #\_C041DBY\_\_\_\_ REV 2

19-Feb-86

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                           |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                 | PARAMETER                                                                                                                                                                            | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                      |
| EQUIP NO.: 2CMS*TE103                                           | OP.TIME:                                                                                                                                                                             | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3                                                                                                                                                                                                                                                       |
| SPEC NO.: C041D                                                 | TEMP (F):                                                                                                                                                                            | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1                                                                                                                                                                                                                                                       |
| SYSTEM: CONTAINMENT<br>MONITORING SYSTEM                        | NORMAL                                                                                                                                                                               | 150/135            | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                       |
|                                                                 | ABNORMAL                                                                                                                                                                             | 190                | 190                | 1                  | 2,4       | TEST-SIM       | NA             |                                                                                                                                                                                                                                                              |
|                                                                 | ACCIDENT                                                                                                                                                                             | 340                | 400                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                              |
| TYPE: (DESCRIPTION)<br>RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | PRESS(PSIG)                                                                                                                                                                          | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1                                                                                                                                                                                                                                                       |
|                                                                 | NORMAL                                                                                                                                                                               | .5 TO 1.0          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                              |
|                                                                 | ABNORMAL                                                                                                                                                                             | 2                  | 2                  | 1                  | 2,4       | AN+DATA        | NA             |                                                                                                                                                                                                                                                              |
| MANUFACTURER: PYCO                                              | ACCIDENT                                                                                                                                                                             | 45                 | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                              |
|                                                                 | RH (X):                                                                                                                                                                              | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1                                                                                                                                                                                                                                                       |
| MODEL NO.: 122-4030-04-2.7-6                                    | NORMAL                                                                                                                                                                               | 90                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                              |
|                                                                 | ABNORMAL                                                                                                                                                                             | 90 [R2]            | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                              |
| SAFETY FUNCTION: - - -<br>MONITOR DRYWELL AREA<br>TEMPERATURE   | ACCIDENT                                                                                                                                                                             | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                              |
|                                                                 | RADIATION:                                                                                                                                                                           | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1                                                                                                                                                                                                                                                       |
|                                                                 | NORM GAMMA                                                                                                                                                                           |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |
|                                                                 | ACC GAMMA                                                                                                                                                                            | 5.3E7              | 2.2E8              | 4                  | 2         | TEST-SIM       | YES            | NOTE 7                                                                                                                                                                                                                                                       |
|                                                                 | NORM BETA                                                                                                                                                                            |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |
|                                                                 | ACC BETA                                                                                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |
|                                                                 | NEUTRON                                                                                                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |
| OP. CODE: A                                                     | ISPRAY                                                                                                                                                                               | YES                | YES                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                              |
|                                                                 | SUBMERGENCE                                                                                                                                                                          | NA                 | NA                 | 1                  | NA        | NA             | NA             |                                                                                                                                                                                                                                                              |
| ACCURACY - -<br>SPEC: +/-1.2F (NOTE 5)<br>DEMO: +/-1.2F         |                                                                                                                                                                                      |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |
| ZONE NO.: PC261641                                              |                                                                                                                                                                                      |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |
| SUBMERGENCE: NA                                                 |                                                                                                                                                                                      |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |
| ISPRAY: YES                                                     |                                                                                                                                                                                      |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |
|                                                                 | DOCUMENT REFERENCE:                                                                                                                                                                  |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED.                                                                                                                                                                              |
|                                                                 | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN<br>CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                                     |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS<br>MAX DESIGN/AVERAGE.                                                                                                                                                                                                    |
|                                                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,<br>SDDF # IEEE-07-145-5003 B THRU G                                                                                                    |                    |                    |                    |           |                |                | 3.OPERABILITY PERIOD EXTENDED FROM 30<br>DAYS TESTED VALUE TO 100 DAYS PLUS<br>MARGIN BY ANALYSIS.                                                                                                                                                           |
|                                                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:<br>FILE NO.33-2-C12                                                                                                                        |                    |                    |                    |           |                |                | 4.TERMINAL HEAD GASKET MUST BE REPLACED<br>WITH A NEW GASKET WHENEVER HEAD COVER<br>IS REMOVED, IN ORDER TO MAINTAIN<br>QUALIFICATION.                                                                                                                       |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I  | 4. SWEC CALCULATION NO. 12177-EOS-029                                                                                                                                                |                    |                    |                    |           |                |                | 5.FACTORY CERTIFICATION TESTING OF RTD'S<br>HAS DEMONSTRATED ACCURACY OF (+/-1.0 F)<br>THE QUALIFICATION TYPE TESTING HAS<br>SHOWN AN ACCURACY OF +/-1.2 F.<br>A REVIEW OF THE SETPOINT CALCULATIONS<br>HAS SHOWN THAT +/-1.2F IS AN<br>ACCEPTABLE ACCURACY. |
|                                                                 | NOTES: (CONT.)                                                                                                                                                                       |                    |                    |                    |           |                |                | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL<br>TO MAINTAIN QUALIFICATION. USE CONAX<br>"ECSA" OR EQUIVALENT.                                                                                                                                                       |
|                                                                 | 17.COMBINED RADIATION FOR GAMMA, BETA AND<br>NEUTRON FOR 40 YEARS OF QUALIFIED LIFE<br>PLUS ACCIDENT INCLUDING APPLICABLE BETA<br>REDUCTION AND NEUTRON CONVERSION IS<br>5.3E7 RADS. |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |
| MAINT/SURVEILL - - -<br>REFERENCE: 2 (NOTE 4)                   |                                                                                                                                                                                      |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2,4           |                                                                                                                                                                                      |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |
|                                                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                                         |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                              |





ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                 | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                              |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----|-------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       | PARAMETER                                                                                                                                                               | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |     | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                   |
| EQUIP NO.: 2CMS*TE104                 | OP.TIME:                                                                                                                                                                | 100 DAYS        | >100 DAYS       | 3                  | 2   | AN+DATA     | YES         | NOTE 3                                                                                                                                                                                                                                    |
| SPEC NO.: C041D                       | TEMP (F):                                                                                                                                                               |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                    |
| SYSTEM: CONTAINMENT MONITORING SYSTEM | NORMAL                                                                                                                                                                  | 150/135         | 150 [R2]        | 1                  | 2,4 | TEST-SIM    | NA          | NOTE 2,7                                                                                                                                                                                                                                  |
|                                       | ABNORMAL                                                                                                                                                                | 190             | 190             | 1                  | 2,4 | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
|                                       | ACCIDENT                                                                                                                                                                | 340             | 400             | 1                  | 2   | TEST-SIM    | YES         |                                                                                                                                                                                                                                           |
| TYPE: (DESCRIPTION)                   | PRESS (PSIG)                                                                                                                                                            |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                    |
| RESISTANCE TEMPERATURE DETECTOR (RTD) | NORMAL                                                                                                                                                                  | .5 TO 1.0       | ATMOS           | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
|                                       | ABNORMAL                                                                                                                                                                | 2               | 2               | 1                  | 2,4 | AN+DATA     | NA          |                                                                                                                                                                                                                                           |
| MANUFACTURER: PYCO                    | ACCIDENT                                                                                                                                                                | 45              | 65 [R2]         | 1                  | 2   | TEST-SIM    | YES         |                                                                                                                                                                                                                                           |
|                                       | RH (%)                                                                                                                                                                  |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                    |
| MODEL NO.: 122-4030-04-2.7-6          | NORMAL                                                                                                                                                                  | 90              | 100             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
|                                       | ABNORMAL                                                                                                                                                                | 90 [R2]         | 100             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
| SAFETY FUNCTION: - - -                | ACCIDENT                                                                                                                                                                | STEAM           | STEAM           | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
| MONITOR DRYWELL AREA TEMPERATURE      | RADIATION:                                                                                                                                                              |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                    |
|                                       | NORM GAMMA                                                                                                                                                              |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                           |
| OP. CODE: A                           | ACC GAMMA                                                                                                                                                               | 4.4E7           | 2.2E8           | 4                  | 2   | TEST-SIM    | YES         | NOTE 6                                                                                                                                                                                                                                    |
|                                       | NORM BETA                                                                                                                                                               |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                           |
|                                       | ACC BETA                                                                                                                                                                |                 |                 |                    |     |             | YES         |                                                                                                                                                                                                                                           |
|                                       | NEUTRON                                                                                                                                                                 |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                           |
|                                       | SPRAY                                                                                                                                                                   | YES             | YES             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
| ACCURACY - -                          | SUBMERGENCE                                                                                                                                                             | NA              | NA              | 1                  | NA  | NA          | NA          |                                                                                                                                                                                                                                           |
| SPEC: +/-1.2F (NOTE 5)                |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| DEMO: +/-1.2F                         |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| ZONE NO.: PC261649                    |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| SUBMERGENCE: NA                       |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| SPRAY: YES                            |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| DOCUMENTATION ACCEPTABILITY:          | DOCUMENT REFERENCE:                                                                                                                                                     |                 |                 |                    |     |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                              |
| ACCEPTABLE TO NUREG 0588,CAT I        | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                           |                 |                 |                    |     |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                    |
|                                       | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                          |                 |                 |                    |     |             |             | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                              |
|                                       | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C12                                                                                                              |                 |                 |                    |     |             |             | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                             |
|                                       | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                   |                 |                 |                    |     |             |             | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
|                                       | NOTES: (CONT.)                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
|                                       | 6.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 4.4E7 RADS. |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| MAINT/SURVEILL - - -                  | 7.RTD IS QUALIFIED TO OPERATE AT 150 DEGREES F.                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| REFERENCE: 2 (NOTE 4)                 | QUALIFIED LIFE IS BASED ON AN AVERAGE TEMPERATURE OF 140 DEGREES F.                                                                                                     |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| QUALIFIED LIFE - - -                  |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| (YEARS): 40                           |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
| REFERENCE: 2,4                        |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |
|                                       | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                            |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                           |



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| EQUIPMENT DESCRIPTION                 | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                              |                    |                    |                                                                                                                                                                                                                                           |           |                |                |          |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------|----------------|----------|
|                                       | PARAMETER                                                                                                                                                               | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE                                                                                                                                                                                                                        |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS  |
|                                       |                                                                                                                                                                         |                    |                    | SPECIFIED                                                                                                                                                                                                                                 | QUALIFIED |                |                |          |
| EQUIP NO.: 2CMS*TE105                 | OP.TIME:                                                                                                                                                                | 100 DAYS           | >100 DAYS          | 3                                                                                                                                                                                                                                         | 2         | AN+DATA        | YES            | NOTE 3   |
| SPEC NO.: C041D                       | TEMP (F):                                                                                                                                                               | 150/135            | 150 [R2]           | 1                                                                                                                                                                                                                                         | 2,4       | TEST-SIM       | NA             | NOTE 1   |
| SYSTEM: CONTAINMENT MONITORING SYSTEM | ABNORMAL:                                                                                                                                                               | 190                | 190                | 1                                                                                                                                                                                                                                         | 2,4       | TEST-SIM       | NA             | NOTE 2,7 |
|                                       | ACCIDENT:                                                                                                                                                               | 340                | 400                | 1                                                                                                                                                                                                                                         | 2         | TEST-SIM       | YES            |          |
| TYPE: (DESCRIPTION)                   | PRESS (PSIG)                                                                                                                                                            | 5 TO 1.0           | ATMOS              | 1                                                                                                                                                                                                                                         | 2         | TEST-SIM       | NA             | NOTE 1   |
| RESISTANCE TEMPERATURE DETECTOR (RTD) | ABNORMAL:                                                                                                                                                               | 2                  | 2                  | 1                                                                                                                                                                                                                                         | 2,4       | AN+DATA        | NA             |          |
| MANUFACTURER: PYCO                    | ACCIDENT:                                                                                                                                                               | 45                 | 65 [R2]            | 1                                                                                                                                                                                                                                         | 2         | TEST-SIM       | YES            |          |
|                                       | RH (%):                                                                                                                                                                 | 90                 | 100                | 1                                                                                                                                                                                                                                         | 2         | TEST-SIM       | NA             | NOTE 1   |
| MODEL NO.: 122-4030-04-2.7-6          | ABNORMAL:                                                                                                                                                               | 90 [R2]            | 100                | 1                                                                                                                                                                                                                                         | 2         | TEST-SIM       | NA             |          |
| SAFETY FUNCTION: - - -                | ACCIDENT:                                                                                                                                                               | STEAM              | STEAM              | 1                                                                                                                                                                                                                                         | 2         | TEST-SIM       | NA             |          |
| MONITOR DRYWELL AREA TEMPERATURE      | RADIATION:                                                                                                                                                              |                    |                    |                                                                                                                                                                                                                                           |           |                |                | NOTE 1   |
|                                       | NORM GAMMA:                                                                                                                                                             |                    |                    |                                                                                                                                                                                                                                           |           |                | NA             |          |
|                                       | ACC GAMMA:                                                                                                                                                              | 6.3E7              | 2.2E8              | 4                                                                                                                                                                                                                                         | 2         | TEST-SIM       | YES            | NOTE 6   |
|                                       | NORM BETA:                                                                                                                                                              |                    |                    |                                                                                                                                                                                                                                           |           |                | NA             |          |
|                                       | ACC BETA:                                                                                                                                                               |                    |                    |                                                                                                                                                                                                                                           |           |                | YES            |          |
|                                       | NEUTRON:                                                                                                                                                                |                    |                    |                                                                                                                                                                                                                                           |           |                | NA             |          |
| OP. CODE: A                           | SPRAY:                                                                                                                                                                  | YES                | YES                | 1                                                                                                                                                                                                                                         | 2         | TEST-SIM       | NA             |          |
|                                       | SUBMERGENCE:                                                                                                                                                            | NA                 | NA                 | NA                                                                                                                                                                                                                                        | NA        | NA             | NA             |          |
| ACCURACY - -                          | SPEC:                                                                                                                                                                   | +/-1.2F (NOTE 5)   |                    |                                                                                                                                                                                                                                           |           |                |                |          |
|                                       | DEMO:                                                                                                                                                                   | +/-1.2F            |                    |                                                                                                                                                                                                                                           |           |                |                |          |
| ZONE NO.: PC250619                    | DOCUMENT REFERENCE:                                                                                                                                                     |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                              |           |                |                |          |
| SUBMERGENCE: NA                       | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                           |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                    |           |                |                |          |
| SPRAY: YES                            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                          |                    |                    | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                              |           |                |                |          |
|                                       | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C12                                                                                                              |                    |                    | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                             |           |                |                |          |
|                                       | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                   |                    |                    | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |           |                |                |          |
| DOCUMENTATION ACCEPTABILITY:          | NOTES: (CONT.)                                                                                                                                                          |                    |                    |                                                                                                                                                                                                                                           |           |                |                |          |
| ACCEPTABLE TO NUREG 0588,CAT I        | 6.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 6.3E7 RADS. |                    |                    |                                                                                                                                                                                                                                           |           |                |                |          |
|                                       | 7.RTD IS QUALIFIED TO OPERATE AT 150 DEGREES F                                                                                                                          |                    |                    |                                                                                                                                                                                                                                           |           |                |                |          |
|                                       | QUALIFIED LIFE IS BASED ON AN AVERAGE TEMPERATURE OF 140 DEGREES F.                                                                                                     |                    |                    |                                                                                                                                                                                                                                           |           |                |                |          |
| MAINT/SURVEILL - - -                  |                                                                                                                                                                         |                    |                    |                                                                                                                                                                                                                                           |           |                |                |          |
| REFERENCE: 2 (NOTE 4)                 |                                                                                                                                                                         |                    |                    |                                                                                                                                                                                                                                           |           |                |                |          |
| QUALIFIED LIFE - - -                  |                                                                                                                                                                         |                    |                    |                                                                                                                                                                                                                                           |           |                |                |          |
| (YEARS): 40                           |                                                                                                                                                                         |                    |                    |                                                                                                                                                                                                                                           |           |                |                |          |
| REFERENCE: 2,4                        |                                                                                                                                                                         |                    |                    |                                                                                                                                                                                                                                           |           |                |                |          |
|                                       | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                            |                    |                    |                                                                                                                                                                                                                                           |           |                |                |          |



QUAL REF #\_C041DCB\_ REV 2

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ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                 |                               | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                              |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
|---------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|----------|
|                                       |                               | PARAMETER                                                                                                                                                               | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |                                                                                                                                                                                                                                           | QUAL METHOD | MARGIN DEMO | REMARKS  |
| =====                                 |                               | =====                                                                                                                                                                   | =====           | =====           | SPECIFIED          | QUALIFIED                                                                                                                                                                                                                                 | =====       | =====       | =====    |
| EQUIP NO.:                            | 2CMS*TE106                    | OP.TIME:                                                                                                                                                                | 100 DAYS        | >100 DAYS       | 3                  | 2                                                                                                                                                                                                                                         | AN+DATA     | YES         | NOTE 3   |
| SPEC NO.:                             | C041D                         | TEMP (F):                                                                                                                                                               | -----           | -----           | -----              | -----                                                                                                                                                                                                                                     | -----       | -----       | NOTE 1   |
| SYSTEM:                               | CONTAINMENT MONITORING SYSTEM | NORMAL                                                                                                                                                                  | 150/135         | 150 [R2]        | 1                  | 2,4                                                                                                                                                                                                                                       | TEST-SIM    | NA          | NOTE 2,7 |
|                                       |                               | ABNORMAL                                                                                                                                                                | 190             | 190             | 1                  | 2,4                                                                                                                                                                                                                                       | TEST-SIM    | NA          |          |
|                                       |                               | ACCIDENT                                                                                                                                                                | 340             | 400             | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM    | YES         |          |
| TYPE: (DESCRIPTION)                   |                               | PRESS (PSIG)                                                                                                                                                            | -----           | -----           | -----              | -----                                                                                                                                                                                                                                     | -----       | -----       | NOTE 1   |
| RESISTANCE TEMPERATURE DETECTOR (RTD) |                               | NORMAL                                                                                                                                                                  | .5 TO 1.0       | ATMOS           | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM    | NA          |          |
|                                       |                               | ABNORMAL                                                                                                                                                                | 2               | 2               | 1                  | 2,4                                                                                                                                                                                                                                       | AN+DATA     | NA          |          |
| MANUFACTURER: PYCO                    |                               | ACCIDENT                                                                                                                                                                | 45              | 65 [R2]         | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM    | YES         |          |
|                                       |                               | RH (%):                                                                                                                                                                 | -----           | -----           | -----              | -----                                                                                                                                                                                                                                     | -----       | -----       | NOTE 1   |
| MODEL NO.:                            | 122-4030-04-2.7-82.3          | NORMAL                                                                                                                                                                  | 90              | 100             | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM    | NA          |          |
|                                       |                               | ABNORMAL                                                                                                                                                                | 90 [R2]         | 100             | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM    | NA          |          |
| SAFETY FUNCTION: - - -                |                               | ACCIDENT                                                                                                                                                                | STEAM           | STEAM           | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM    | NA          |          |
| MONITOR DRYWELL AREA TEMPERATURE      |                               | RADIATION:                                                                                                                                                              | -----           | -----           | -----              | -----                                                                                                                                                                                                                                     | -----       | -----       | NOTE 1   |
|                                       |                               | NORM GAMMA                                                                                                                                                              |                 |                 |                    |                                                                                                                                                                                                                                           |             | NA          |          |
|                                       |                               | ACC GAMMA                                                                                                                                                               | 4.5E7           | 2.2E8           | 4                  | 2                                                                                                                                                                                                                                         | TEST-SIM    | YES         | NOTE 6   |
| OP. CODE: A                           |                               | NORM BETA                                                                                                                                                               |                 |                 |                    |                                                                                                                                                                                                                                           |             | NA          |          |
|                                       |                               | ACC BETA                                                                                                                                                                |                 |                 |                    |                                                                                                                                                                                                                                           |             | YES         |          |
|                                       |                               | NEUTRON                                                                                                                                                                 |                 |                 |                    |                                                                                                                                                                                                                                           |             | NA          |          |
|                                       |                               | SPRAY                                                                                                                                                                   | YES             | YES             | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM    | NA          |          |
| ACCURACY - -                          |                               | SUBMERGENCE                                                                                                                                                             | NA              | NA              | NA                 | NA                                                                                                                                                                                                                                        | NA          | NA          |          |
| SPEC: +/-1.2F (NOTE 5)                |                               | =====                                                                                                                                                                   |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
| DEMO: +/-1.2F                         |                               | =====                                                                                                                                                                   |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
| ZONE NO.:                             | PC240612                      |                                                                                                                                                                         |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
| SUBMERGENCE:                          | NA                            |                                                                                                                                                                         |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
| SPRAY:                                | YES                           |                                                                                                                                                                         |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
|                                       |                               | DOCUMENT REFERENCE:                                                                                                                                                     |                 |                 |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                              |             |             |          |
|                                       |                               | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                           |                 |                 |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                    |             |             |          |
|                                       |                               | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                          |                 |                 |                    | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                              |             |             |          |
|                                       |                               | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C12                                                                                                              |                 |                 |                    | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                             |             |             |          |
|                                       |                               | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                   |                 |                 |                    | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |             |             |          |
| DOCUMENTATION ACCEPTABILITY:          |                               |                                                                                                                                                                         |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
| ACCEPTABLE TO NUREG 0588,CAT I        |                               |                                                                                                                                                                         |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
|                                       |                               | NOTES: (CONT.)                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
|                                       |                               | 6.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 4.5E7 RADS. |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
| MAINT/SURVEILL - - -                  |                               | 7.RTD IS QUALIFIED TO OPERATE AT 150 DEGREES F; QUALIFIED LIFE IS BASED ON AN AVERAGE TEMPERATURE OF 140 DEGREES F.                                                     |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
| REFERENCE: 2 (NOTE 4)                 |                               |                                                                                                                                                                         |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
| QUALIFIED LIFE - - -                  |                               |                                                                                                                                                                         |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
| (YEARS): 40                           |                               |                                                                                                                                                                         |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
| REFERENCE: 2,4                        |                               |                                                                                                                                                                         |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |
|                                       |                               | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                            |                 |                 |                    |                                                                                                                                                                                                                                           |             |             |          |

- DOCUMENT REFERENCE:
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]
  2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G
  3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C12
  4. SWEC CALCULATION NO. 12177-EQS-029

- NOTES:
1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
  2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
  3. OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.
  4. TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.
  5. FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.



ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                   | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |                                                 |                |                |         |
|--------------------------------|-------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-------------------------------------------------|----------------|----------------|---------|
|                                |                   | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                 | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
| =====                          |                   | =====                                           | =====              | =====              | SPECIFIED          | QUALIFIED                                       | =====          | =====          | =====   |
| EQUIP NO.:                     | 2CMS*TE107        | OP.TIME:                                        | 100 DAYS           | >100 DAYS          | 3                  | 2                                               | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                      | C041D             | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -                                         | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                        | CONTAINMENT       | NORMAL                                          | 150/135            | 150                | 1                  | 2,4                                             | TEST-SIM       | NA             | NOTE 2  |
|                                | MONITORING SYSTEM | ABNORMAL                                        | 190                | 190                | 1                  | 2,4                                             | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)            |                   | ACCIDENT                                        | 270                | 400                | 1                  | 2                                               | TEST-SIM       | YES            |         |
| RESISTANCE TEMPERATURE         |                   | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -                                         | - - - -        | - - - -        | NOTE 1  |
| DETECTOR (RTD)                 |                   | NORMAL                                          | .5 TO 1            | ATMOS              | 1                  | 2                                               | TEST-SIM       | NA             |         |
|                                |                   | ABNORMAL                                        | 2.0                | ATMOS              | 1                  | 2                                               | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO             |                   | ACCIDENT                                        | 40                 | 63                 | 1                  | 2                                               | TEST-SIM       | YES            |         |
|                                |                   | IRH (%):                                        | - - - -            | - - - -            | - - - -            | - - - -                                         | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                     |                   | NORMAL                                          | 90 [R2]            | 100                | 1                  | 2                                               | TEST-SIM       | NA             |         |
|                                | 122-4030-04-2.7-6 | ABNORMAL                                        | 90 [R2]            | 100                | 1                  | 2                                               | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -         |                   | ACCIDENT                                        | 100                | STEAM              | 1                  | 2                                               | TEST-SIM       | NA             |         |
| MONITOR SUPP CHAMBER AREA      |                   | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -                                         | - - - -        | - - - -        | NOTE 1  |
| TEMPERATURE                    |                   | NORM GAMMA                                      |                    |                    | 1                  |                                                 |                | NA             |         |
|                                |                   | ACC GAMMA                                       | 5.5E7              | 2.2E8              | 4                  | 2                                               | TEST-SIM       | YES            | NOTE 7  |
| OP. CODE: A                    |                   | NORM BETA                                       |                    |                    | 1                  |                                                 |                | NA             |         |
|                                |                   | ACC BETA                                        |                    |                    | 1                  |                                                 |                | YES            |         |
|                                |                   | NEUTRON                                         |                    |                    | 1                  |                                                 |                | NA             |         |
|                                |                   | SPRAY                                           | NA                 | YES                | NA                 | 2                                               | TEST-SIM       | NA             |         |
| ACCURACY - -                   |                   | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA                                              | NA             | NA             |         |
| SPEC: +/-1.2F (NOTE 5)         |                   | =====                                           |                    |                    |                    |                                                 |                |                |         |
| DEMO: +/-1.2F                  |                   | =====                                           |                    |                    |                    |                                                 |                |                |         |
| ZONE NO.:                      | PC215121          |                                                 |                    |                    |                    |                                                 |                |                |         |
| SUBMERGENCE:                   |                   | DOCUMENT REFERENCE:                             |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |                |                |         |
| SPRAY:                         |                   | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    | SEE THE DOCUMENT REFERENCED.                    |                |                |         |
|                                |                   | CRITERIA, EQEDC-1, REV 3, DEC. 20, 1985. [R2]   |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS              |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                   | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    | MAX DESIGN/AVERAGE.                             |                |                |         |
| SUBMERGENCE OR SPRAY           |                   | SDDF # IEEE-07-145-5003 B THRU G                |                    |                    |                    | 3.OPERABILITY PERIOD EXTENDED FROM 30           |                |                |         |
|                                |                   | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    | DAYS TESTED VALUE TO 100 DAYS PLUS              |                |                |         |
|                                |                   | FILE NO.33-2-C13 [R2]                           |                    |                    |                    | MARGIN BY ANALYSIS.                             |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                   | 4. SWEC CALCULATION NO. 12177-EQS-029           |                    |                    |                    | 4.TERMINAL HEAD GASKET MUST BE REPLACED         |                |                |         |
| ACCEPTABLE TO NUREG 0508,CAT I |                   |                                                 |                    |                    |                    | WITH A NEW GASKET WHENEVER HEAD COVER           |                |                |         |
|                                |                   | NOTES: (CONT.)                                  |                    |                    |                    | IS REMOVED, IN ORDER TO MAINTAIN                |                |                |         |
|                                |                   | 17.COMBINED RADIATION FOR GAMMA, BETA AND       |                    |                    |                    | QUALIFICATION.                                  |                |                |         |
|                                |                   | NEUTRON FOR 40 YEARS OF QUALIFIED LIFE          |                    |                    |                    | 5.FACTORY CERTIFICATION TESTING OF RTD'S        |                |                |         |
|                                |                   | PLUS ACCIDENT INCLUDING APPLICABLE              |                    |                    |                    | HAS DEMONSTRATED ACCURACY OF (+/-1.0 F          |                |                |         |
| MAINT/SURVEILL - - -           |                   | BETA REDUCTION AND NEUTRON CONVERSION           |                    |                    |                    | THE QUALIFICATION TYPE TESTING HAS              |                |                |         |
| REFERENCE: 2 (NOTE 4)          |                   | IS 5.5E7RADs.                                   |                    |                    |                    | SHOWN AN ACCURACY OF +/-1.2 F.                  |                |                |         |
|                                |                   |                                                 |                    |                    |                    | A REVIEW OF THE SETPOINT CALCULATIONS           |                |                |         |
| QUALIFIED LIFE - - -           |                   |                                                 |                    |                    |                    | HAS SHOWN THAT +/-1.2F IS AN                    |                |                |         |
| (YEARS): 40                    |                   |                                                 |                    |                    |                    | ACCEPTABLE ACCURACY.                            |                |                |         |
| REFERENCE: 2,4                 |                   |                                                 |                    |                    |                    | 6.RTD REQUIRES QUALIFIED CONDUIT SEAL           |                |                |         |
|                                |                   |                                                 |                    |                    |                    | TO MAINTAIN QUALIFICATION. USE CONAX            |                |                |         |
|                                |                   |                                                 |                    |                    |                    | "ECSA" OR EQUIVALENT.                           |                |                |         |
|                                |                   | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |                                                 |                |                |         |





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[[R2] INDICATES CHANGES MADE IN THIS REVISION



QUAL REF #\_C041DCE\_ REV 2

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ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                              |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----|-------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                              | PARAMETER                                                                                                                                                               | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |     | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                    |
| EQUIP NO.: 2CMS*TE109                                        | OP.TIME:                                                                                                                                                                | 100 DAYS        | >100 DAYS       | 3                  | 2   | AN+DATA     | YES         | NOTE 3                                                                                                                                                                                                                                     |
| SPEC NO.: C041D                                              | TEMP (F):                                                                                                                                                               |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                     |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                        | NORMAL                                                                                                                                                                  | 150/135         | 150 [R2]        | 1                  | 2,4 | TEST-SIM    | NA          | NOTE 2,7                                                                                                                                                                                                                                   |
|                                                              | ABNORMAL                                                                                                                                                                | 190             | 190             | 1                  | 2,4 | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
|                                                              | ACCIDENT                                                                                                                                                                | 270             | 400             | 1                  | 2   | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
| TYPE: (DESCRIPTION) RESISTANCE TEMPERATURE DETECTOR (RTD)    | PRESS (PSIG)                                                                                                                                                            |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                     |
|                                                              | NORMAL                                                                                                                                                                  | .5 TO 1.0       | ATMOS           | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
|                                                              | ABNORMAL                                                                                                                                                                | 2               | 2               | 1                  | 2,4 | AN+DATA     | NA          |                                                                                                                                                                                                                                            |
| MANUFACTURER: PYCO                                           | ACCIDENT                                                                                                                                                                | 40              | 65 [R2]         | 1                  | 2   | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
|                                                              | RH (%):                                                                                                                                                                 |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                     |
| MODEL NO.: 122-4030-04-2.7-6                                 | NORMAL                                                                                                                                                                  | 90              | 100             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
|                                                              | ABNORMAL                                                                                                                                                                | 90 [R2]         | 100             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| SAFETY FUNCTION: - - - MONITOR SUPP CHAMBER AREA TEMPERATURE | ACCIDENT                                                                                                                                                                | 100             | STEAM           | 1                  | 2   | TEST-SIM    | NA          | NOTE 1                                                                                                                                                                                                                                     |
|                                                              | RADIATION:                                                                                                                                                              |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|                                                              | NORM GAMMA                                                                                                                                                              |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                            |
| OP. CODE: A                                                  | ACC GAMMA                                                                                                                                                               | 5.5E7           | 2.2E8           | 4                  | 2   | TEST-SIM    | YES         | NOTE 6                                                                                                                                                                                                                                     |
|                                                              | NORM BETA                                                                                                                                                               |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                            |
|                                                              | ACC BETA                                                                                                                                                                |                 |                 |                    |     |             | YES         |                                                                                                                                                                                                                                            |
|                                                              | NEUTRON                                                                                                                                                                 |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                            |
|                                                              | SPRAY                                                                                                                                                                   | YES             | YES             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| ACCURACY - -                                                 | SUBMERGENCE                                                                                                                                                             | <2 SEC          | 10 SEC          | 1                  | 2,4 | AN + DATA   | NA          |                                                                                                                                                                                                                                            |
| SPEC: +/-1.2F (NOTE 5)                                       |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| DEMO: +/-1.2F                                                |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| ZONE NO.: PC215121                                           |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| SUBMERGENCE: YES                                             |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| SPRAY: YES                                                   |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I  | DOCUMENT REFERENCE:                                                                                                                                                     |                 |                 |                    |     |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |
|                                                              | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                           |                 |                 |                    |     |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |
|                                                              | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                          |                 |                 |                    |     |             |             | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |
|                                                              | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C13                                                                                                              |                 |                 |                    |     |             |             | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |
|                                                              | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                   |                 |                 |                    |     |             |             | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
|                                                              | NOTES: (CONT.)                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|                                                              | 6.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 5.5E7 RADS. |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| MAINT/SURVEILL - - - REFERENCE: 2 (NOTE 4,6)                 | 7.RTD IS QUALIFIED TO OPERATE AT 150 DEGREES F                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|                                                              | QUALIFIED LIFE IS BASED ON AN AVERAGE TEMPERATURE OF 140 DEGREES F.                                                                                                     |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| QUALIFIED LIFE - - - (YEARS): 40 REFERENCE: 2,4              |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|                                                              | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                            |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |



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QUAL REF #\_C041DCF\_ REV 2

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                 | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       | PARAMETER                                                                                                                                                                | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                   |
|                                       |                                                                                                                                                                          |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                           |
| EQUIP NO.: 2CMS*TE116                 | OP.TIME:                                                                                                                                                                 | 100 DAYS        | >100 DAYS       | 3                  | 2         | AN+DATA     | YES         | NOTE 3                                                                                                                                                                                                                                    |
| SPEC NO.: C041D                       | TEMP (F):                                                                                                                                                                | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                                                                                                                                                                                    |
| SYSTEM: CONTAINMENT MONITORING SYSTEM | NORMAL                                                                                                                                                                   | 150/135         | 150 [R2]        | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2,7                                                                                                                                                                                                                                  |
|                                       | ABNORMAL                                                                                                                                                                 | 190             | 190             | 1                  | 2,4       | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
|                                       | ACCIDENT                                                                                                                                                                 | 340             | 400             | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                           |
| TYPE: (DESCRIPTION)                   | PRESS (PSIG)                                                                                                                                                             | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                                                                                                                                                                                    |
| RESISTANCE TEMPERATURE DETECTOR (RTD) | NORMAL                                                                                                                                                                   | .5 TO 1.0       | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
|                                       | ABNORMAL                                                                                                                                                                 | 2               | 2               | 1                  | 2,4       | AN+DATA     | NA          |                                                                                                                                                                                                                                           |
| MANUFACTURER: PYCO                    | ACCIDENT                                                                                                                                                                 | 45              | 65 [R2]         | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                           |
|                                       | RH (%):                                                                                                                                                                  | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                                                                                                                                                                                    |
| MODEL NO.: 122-4030-04-2.7-6          | NORMAL                                                                                                                                                                   | 90              | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
|                                       | ABNORMAL                                                                                                                                                                 | 90 [R2]         | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
| SAFETY FUNCTION: - - -                | ACCIDENT                                                                                                                                                                 | STEAM           | STEAM           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
| MONITOR SUPP CHAMBER AREA TEMPERATURE | RADIATION:                                                                                                                                                               | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                                                                                                                                                                                    |
|                                       | NORM GAMMA                                                                                                                                                               |                 |                 |                    |           |             | NA          |                                                                                                                                                                                                                                           |
|                                       | ACC GAMMA                                                                                                                                                                | 4.3E7           | 2.2E8           | 4                  | 2         | TEST-SIM    | YES         | NOTE 6                                                                                                                                                                                                                                    |
|                                       | NORM BETA                                                                                                                                                                |                 |                 |                    |           |             | NA          |                                                                                                                                                                                                                                           |
|                                       | ACC BETA                                                                                                                                                                 |                 |                 |                    |           |             | YES         |                                                                                                                                                                                                                                           |
|                                       | NEUTRON                                                                                                                                                                  |                 |                 |                    |           |             | NA          |                                                                                                                                                                                                                                           |
| OP. CODE: A                           | SPRAY                                                                                                                                                                    | YES             | YES             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                           |
|                                       | SUBMERGENCE                                                                                                                                                              | NA              | NA              | NA                 | NA        | NA          | NA          |                                                                                                                                                                                                                                           |
| ACCURACY - -                          |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| SPEC: +/-1.2F (NOTE 5)                |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| DEMO: +/-1.2F                         |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| ZONE NO.: PC306713                    |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| SUBMERGENCE: NA                       |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| SPRAY: YES                            |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| DOCUMENTATION ACCEPTABILITY:          | DOCUMENT REFERENCE:                                                                                                                                                      |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                              |
| ACCEPTABLE TO NUREG 0588,CAT I        | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                            |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                    |
|                                       | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                           |                 |                 |                    |           |             |             | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                              |
|                                       | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C12                                                                                                               |                 |                 |                    |           |             |             | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                             |
|                                       | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                    |                 |                 |                    |           |             |             | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
|                                       | NOTES: (CONT.)                                                                                                                                                           |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
|                                       | 16.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 4.3E7 RADS. |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| MAINT/SURVEILL - - -                  | 17.RTD IS QUALIFIED TO OPERATE AT 150 DEGREES F                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| REFERENCE: 2 (NOTE 4)                 | QUALIFIED LIFE IS BASED ON AN AVERAGE TEMPERATURE OF 140 DEGREES F.                                                                                                      |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| QUALIFIED LIFE - - -                  |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| (YEARS): 40                           |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
| REFERENCE: 2,4                        |                                                                                                                                                                          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |
|                                       | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                           |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                 |                    |                    |                    |           |                |                |          |
|--------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|----------|
|                                |                                          | PARAMETER                                                                                                                                                                                                                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS  |
|                                |                                          |                                                                                                                                                                                                                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |          |
| EQUIP NO.:                     | 2CMS*TE117                               | OP.TIME:                                                                                                                                                                                                                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3   |
| SPEC NO.:                      | C041D                                    | TEMP (F):                                                                                                                                                                                                                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1   |
| SYSTEM:                        | CONTAINMENT<br>MONITORING SYSTEM         | NORMAL                                                                                                                                                                                                                                     | 150/135            | 150 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2,7 |
|                                |                                          | ABNORMAL                                                                                                                                                                                                                                   | 190                | 190                | 1                  | 2,4       | TEST-SIM       | NA             |          |
|                                |                                          | ACCIDENT                                                                                                                                                                                                                                   | 340                | 400                | 1                  | 2         | TEST-SIM       | YES            |          |
| TYPE: (DESCRIPTION)            | RESISTANCE TEMPERATURE<br>DETECTOR (RTD) | PRESS (PSIG)                                                                                                                                                                                                                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1   |
|                                |                                          | NORMAL                                                                                                                                                                                                                                     | .5 TO 1.0          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |          |
|                                |                                          | ABNORMAL                                                                                                                                                                                                                                   | 2                  | 2                  | 1                  | 2,4       | AN+DATA        | NA             |          |
| MANUFACTURER:                  | PYCO                                     | ACCIDENT                                                                                                                                                                                                                                   | 45                 | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |          |
|                                |                                          | RH (%):                                                                                                                                                                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1   |
| MODEL NO.:                     | 122-4030-04-2.7-6                        | NORMAL                                                                                                                                                                                                                                     | 90                 | 100                | 1                  | 2         | TEST-SIM       | NA             |          |
|                                |                                          | ABNORMAL                                                                                                                                                                                                                                   | 90 [R2]            | 100                | 1                  | 2         | TEST-SIM       | NA             |          |
| SAFETY FUNCTION:               | - - -                                    | ACCIDENT                                                                                                                                                                                                                                   | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |          |
|                                | MONITOR DRYWELL AREA<br>TEMPERATURE      | RADIATION:                                                                                                                                                                                                                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1   |
|                                |                                          | NORM GAMMA                                                                                                                                                                                                                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | NA             |          |
|                                |                                          | ACC GAMMA                                                                                                                                                                                                                                  | 5.4E7              | 2.2E8              | 4                  | 2         | TEST-SIM       | YES            | NOTE 6   |
| OP. CODE:                      | A                                        | NORM BETA                                                                                                                                                                                                                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | NA             |          |
|                                |                                          | ACC BETA                                                                                                                                                                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | YES            |          |
|                                |                                          | NEUTRON                                                                                                                                                                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | NA             |          |
|                                |                                          | SPRAY                                                                                                                                                                                                                                      | YES                | YES                | 1                  | 2         | TEST-SIM       | NA             |          |
| ACCURACY - -                   |                                          | SUBMERGENCE                                                                                                                                                                                                                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |          |
| SPEC:                          | +/-1.2F (NOTE 5)                         |                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |          |
| DEMO:                          | +/-1.2F                                  |                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |          |
| ZONE NO.:                      | PC289681                                 |                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |          |
| SUBMERGENCE:                   | NA                                       |                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |          |
| SPRAY:                         | YES                                      |                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |          |
| DOCUMENTATION ACCEPTABILITY:   |                                          | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |                    |                    |                    |           |                |                |          |
| ACCEPTABLE TO NUREG 0588,CAT I |                                          | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |                    |                    |                    |           |                |                |          |
|                                |                                          | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |                    |                    |                    |           |                |                |          |
|                                |                                          | 4.TERMIAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                               |                    |                    |                    |           |                |                |          |
|                                |                                          | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |                    |                    |                    |           |                |                |          |
| MAINT/SURVEILL - - -           |                                          |                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |          |
| REFERENCE: 2 (NOTE 4)          |                                          |                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |          |
| QUALIFIED LIFE - - -           |                                          |                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |          |
| (YEARS): 40                    |                                          |                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |          |
| REFERENCE: 2,4                 |                                          |                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |          |
|                                |                                          | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                                                                                               |                    |                    |                    |           |                |                |          |





19-Mar-86

QUAL REF #\_C041DCH\_\_\_ REV 2

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                              |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----|-------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             | PARAMETER                                                                                                                                                               | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |     | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                    |
| EQUIP NO.: 2CMS*TE118                                       | OP.TIME:                                                                                                                                                                | 100 DAYS        | >100 DAYS       | 3                  | 2   | AN+DATA     | YES         | NOTE 3                                                                                                                                                                                                                                     |
| SPEC NO.: C041D                                             | TEMP (F):                                                                                                                                                               |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                     |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                       | NORMAL                                                                                                                                                                  | 150/135         | 150 [R2]        | 1                  | 2,4 | TEST-SIM    | NA          | NOTE 2,7                                                                                                                                                                                                                                   |
|                                                             | ABNORMAL                                                                                                                                                                | 190             | 190             | 1                  | 2,4 | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
|                                                             | ACCIDENT                                                                                                                                                                | 340             | 400             | 1                  | 2   | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
| TYPE: (DESCRIPTION) RESISTANCE TEMPERATURE DETECTOR (RTD)   | PRESS (PSIG)                                                                                                                                                            |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                     |
|                                                             | NORMAL                                                                                                                                                                  | .5 TO 1.0       | ATMOS           | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
|                                                             | ABNORMAL                                                                                                                                                                | 2               | 2               | 1                  | 2,4 | AN+DATA     | NA          |                                                                                                                                                                                                                                            |
| MANUFACTURER: PYCO                                          | ACCIDENT                                                                                                                                                                | 45              | 65 [R2]         | 1                  | 2   | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
|                                                             | IRH (%)                                                                                                                                                                 |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                     |
|                                                             | NORMAL                                                                                                                                                                  | 90              | 100             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| MODEL NO.: 122-4030-04-2.7-6                                | ABNORMAL                                                                                                                                                                | 90 [R2]         | 100             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| SAFETY FUNCTION: - - - MONITOR DRYWELL AREA TEMPERATURE     | ACCIDENT                                                                                                                                                                | STEAM           | STEAM           | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
|                                                             | RADIATION:                                                                                                                                                              |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                     |
|                                                             | NORM GAMMA                                                                                                                                                              |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                            |
|                                                             | ACC GAMMA                                                                                                                                                               | 4.4E7           | 2.2E8           | 4                  | 2   | TEST-SIM    | YES         | NOTE 6                                                                                                                                                                                                                                     |
|                                                             | NORM BETA                                                                                                                                                               |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                            |
|                                                             | ACC BETA                                                                                                                                                                |                 |                 |                    |     |             | YES         |                                                                                                                                                                                                                                            |
|                                                             | NEUTRON                                                                                                                                                                 |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                            |
| OP. CODE: A                                                 | SPRAY                                                                                                                                                                   | YES             | YES             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
|                                                             | SUBMERGENCE                                                                                                                                                             | NA              | NA              | NA                 | NA  | NA          | NA          |                                                                                                                                                                                                                                            |
| ACCURACY - - SPEC: +/-1.2F (NOTE 5)<br>DEMO: +/-1.2F        |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| ZONE NO.: PC261649                                          |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| SUBMERGENCE: NA                                             |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| SPRAY: YES                                                  |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I | DOCUMENT REFERENCE:                                                                                                                                                     |                 |                 |                    |     |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |
|                                                             | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                           |                 |                 |                    |     |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |
|                                                             | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                          |                 |                 |                    |     |             |             | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |
|                                                             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C12                                                                                                              |                 |                 |                    |     |             |             | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |
|                                                             | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                   |                 |                 |                    |     |             |             | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
|                                                             | NOTES: (CONT.)                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|                                                             | 6.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 4.4E7 RADS. |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| MAINT/SURVEILL - - - REFERENCE: 2 (NOTE 4)                  | 7.RTD IS QUALIFIED TO OPERATE AT 150 DEGREES F                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|                                                             | QUALIFIED LIFE IS BASED ON AN AVERAGE TEMPERATURE OF 140 DEGREES F.                                                                                                     |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| QUALIFIED LIFE - - - (YEARS): 40<br>REFERENCE: 2,4          |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|                                                             | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                            |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |



19-Mar-86

[[CR2] INDICATES CHANGES MADE IN THIS REVISION



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             | PARAMETER                                                                                                                                                               | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                    |
|                                                             |                                                                                                                                                                         |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                            |
| EQUIP NO.: 2CMS*TE120                                       | OP.TIME:                                                                                                                                                                | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3                                                                                                                                                                                                                                     |
| SPEC NO.: C041D                                             | TEMP (F):                                                                                                                                                               |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                     |
| SYSTEM: CONTAINMENT MONITORING SYSTEM                       | NORMAL                                                                                                                                                                  | 150/135            | 150 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2,7                                                                                                                                                                                                                                   |
|                                                             | ABNORMAL                                                                                                                                                                | 190                | 190                | 1                  | 2,4       | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| TYPE: (DESCRIPTION)                                         | ACCIDENT                                                                                                                                                                | 340                | 400                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                            |
| RESISTANCE TEMPERATURE DETECTOR (RTD)                       | PRESS (PSIG)                                                                                                                                                            |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                     |
|                                                             | NORMAL                                                                                                                                                                  | .5 TO 1.0          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
|                                                             | ABNORMAL                                                                                                                                                                | 2                  | 2                  | 1                  | 2,4       | AN+DATA        | NA             |                                                                                                                                                                                                                                            |
| MANUFACTURER: PYCO                                          | ACCIDENT                                                                                                                                                                | 45                 | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                            |
|                                                             | RH (%)                                                                                                                                                                  |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                     |
| MODEL NO.: 122-4030-04-2.7-6                                | NORMAL                                                                                                                                                                  | 90                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
|                                                             | ABNORMAL                                                                                                                                                                | 90 [R2]            | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| SAFETY FUNCTION: - - -                                      | ACCIDENT                                                                                                                                                                | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| MONITOR DRYWELL AREA TEMPERATURE                            | RADIATION:                                                                                                                                                              |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                     |
|                                                             | NORM GAMMA                                                                                                                                                              |                    |                    |                    |           |                | NA             |                                                                                                                                                                                                                                            |
|                                                             | ACC GAMMA                                                                                                                                                               | 3.9E7              | 2.2E8              | 4                  | 2         | TEST-SIM       | YES            | NOTE 6                                                                                                                                                                                                                                     |
| OP: CODE: A                                                 | NORM BETA                                                                                                                                                               |                    |                    |                    |           |                | NA             |                                                                                                                                                                                                                                            |
|                                                             | ACC BETA                                                                                                                                                                |                    |                    |                    |           |                | YES            |                                                                                                                                                                                                                                            |
|                                                             | NEUTRON                                                                                                                                                                 |                    |                    |                    |           |                | NA             |                                                                                                                                                                                                                                            |
|                                                             | SPRAY                                                                                                                                                                   | YES                | YES                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| ACCURACY - -                                                | SUBMERGENCE                                                                                                                                                             | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                            |
| SPEC: +/-1.2F (NOTE 5)                                      |                                                                                                                                                                         |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| DEMO: +/-1.2F                                               |                                                                                                                                                                         |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| ZONE NO.: PC250625                                          |                                                                                                                                                                         |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| SUBMERGENCE: NA                                             | DOCUMENT REFERENCE:                                                                                                                                                     |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |
| SPRAY: YES                                                  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                           |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                          |                    |                    |                    |           |                |                | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |
|                                                             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C12                                                                                                              |                    |                    |                    |           |                |                | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                   |                    |                    |                    |           |                |                | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
|                                                             | NOTES                                                                                                                                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
|                                                             | 6.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 3.9E7 RADS. |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| MAINT/SURVEILL - - -                                        | 7.RTD IS QUALIFIED TO OPERATE AT 150 DEGREES F.                                                                                                                         |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| REFERENCE: 2 (NOTE 4)                                       | QUALIFIED LIFE IS BASED ON AN AVERAGE TEMPERATURE OF 140 DEGREES F.                                                                                                     |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| QUALIFIED LIFE - - -                                        |                                                                                                                                                                         |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| (YEARS): 40                                                 |                                                                                                                                                                         |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| REFERENCE: 2,4                                              |                                                                                                                                                                         |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
|                                                             | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                            |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |



QUAL REF # C041DCK REV 2

19-Mar-86

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                 | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                               |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----|-------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       | PARAMETER                                                                                                                                                                | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |     | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                    |
| EQUIP NO.: 2CMS*TE121                 | OP.TIME:                                                                                                                                                                 | 100 DAYS        | >100 DAYS       | 3                  | 2   | AN+DATA     | YES         | NOTE 3                                                                                                                                                                                                                                     |
| SPEC NO.: C041D                       | TEMP (F):                                                                                                                                                                | ---             | ---             | ---                | --- | ---         | ---         | NOTE 1                                                                                                                                                                                                                                     |
| SYSTEM: CONTAINMENT MONITORING SYSTEM | NORMAL                                                                                                                                                                   | 150/135         | 150 [R2]        | 1                  | 2,4 | TEST-SIM    | NA          | NOTE 2,7                                                                                                                                                                                                                                   |
|                                       | ABNORMAL                                                                                                                                                                 | 190             | 190             | 1                  | 2,4 | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
|                                       | ACCIDENT                                                                                                                                                                 | 340             | 400             | 1                  | 2   | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
| TYPE: (DESCRIPTION)                   | PRESS (PSIG)                                                                                                                                                             | ---             | ---             | ---                | --- | ---         | ---         | NOTE 1                                                                                                                                                                                                                                     |
| RESISTANCE TEMPERATURE DETECTOR (RTD) | NORMAL                                                                                                                                                                   | .5 TO 1.0       | ATMOS           | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
|                                       | ABNORMAL                                                                                                                                                                 | 2               | 2               | 1                  | 2,4 | AN+DATA     | NA          |                                                                                                                                                                                                                                            |
| MANUFACTURER: PYCO                    | ACCIDENT                                                                                                                                                                 | 45              | 65 [R2]         | 1                  | 2   | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
|                                       | RH (%):                                                                                                                                                                  | ---             | ---             | ---                | --- | ---         | ---         | NOTE 1                                                                                                                                                                                                                                     |
| MODEL NO.:                            | NORMAL                                                                                                                                                                   | 90              | 100             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| 122-4030-04-2.7-6                     | ABNORMAL                                                                                                                                                                 | 90 [R2]         | 100             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| SAFETY FUNCTION: ---                  | ACCIDENT                                                                                                                                                                 | STEAM           | STEAM           | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| MONITOR DRYWELL AREA TEMPERATURE      | RADIATION:                                                                                                                                                               | ---             | ---             | ---                | --- | ---         | ---         | NOTE 1                                                                                                                                                                                                                                     |
|                                       | NORM GAMMA                                                                                                                                                               | 4.5E7           | 2.2E8           | 4                  | 2   | TEST-SIM    | YES         | NOTE 6                                                                                                                                                                                                                                     |
| OP. CODE: A                           | ACC GAMMA                                                                                                                                                                |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                            |
|                                       | NORM BETA                                                                                                                                                                |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                            |
|                                       | ACC BETA                                                                                                                                                                 |                 |                 |                    |     |             | YES         |                                                                                                                                                                                                                                            |
|                                       | NEUTRON                                                                                                                                                                  |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                            |
|                                       | SPRAY                                                                                                                                                                    |                 | YES             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| ACCURACY --                           | SUBMERGENCE                                                                                                                                                              | NA              | NA              | NA                 | NA  | NA          | NA          |                                                                                                                                                                                                                                            |
| SPEC: +/-1.2F (NOTE 5)                |                                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| DEMO: +/-1.2F                         |                                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| ZONE NO.: PC240603                    |                                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| SUBMERGENCE: YES                      |                                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| SPRAY: YES                            |                                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|                                       | DOCUMENT REFERENCE:                                                                                                                                                      |                 |                 |                    |     |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |
|                                       | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                            |                 |                 |                    |     |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |
|                                       | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                           |                 |                 |                    |     |             |             | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |
|                                       | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C12                                                                                                               |                 |                 |                    |     |             |             | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |
|                                       | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                    |                 |                 |                    |     |             |             | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
| DOCUMENTATION ACCEPTABILITY:          | NOTES: (CONT.)                                                                                                                                                           |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| ACCEPTABLE TO NUREG 0588,CAT I        | 16.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 4.5E7 RADS. |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|                                       | 17.RTD IS QUALIFIED TO OPERATE AT 150 DEGREES F. QUALIFIED LIFE IS BASED ON AN AVERAGE TEMPERATURE OF 140 DEGREES F.                                                     |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| MAINT/SURVEILL ---                    |                                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| REFERENCE: 2 (NOTE 4)                 |                                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| QUALIFIED LIFE ---                    |                                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| (YEARS): 40                           |                                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| REFERENCE: 2,4                        |                                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|                                       | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                             |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



QUAL REF #\_C041DCM\_\_\_\_ REV 2

19-Mar-86

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                 | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                              |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----|-------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       | PARAMETER                                                                                                                                                               | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |     | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                    |
| EQUIP NO.: 2CMS*TE123                 | OP.TIME:                                                                                                                                                                | 100 DAYS        | >100 DAYS       | 3                  | 2   | AN+DATA     | YES         | NOTE 3                                                                                                                                                                                                                                     |
| SPEC NO.: C041D                       | TEMP (F):                                                                                                                                                               | 150/135         | 150 [R2]        | 1                  | 2,4 | TEST-SIM    | NA          | NOTE 1                                                                                                                                                                                                                                     |
| SYSTEM: CONTAINMENT MONITORING SYSTEM | ABNORMAL:                                                                                                                                                               | 190             | 190             | 1                  | 2,4 | TEST-SIM    | NA          | NOTE 2,7                                                                                                                                                                                                                                   |
| TYPE: (DESCRIPTION)                   | ACCIDENT:                                                                                                                                                               | 270             | 400             | 1                  | 2   | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
| RESISTANCE TEMPERATURE DETECTOR (RTD) | PRESS(PSIG):                                                                                                                                                            | 5 TO 1.0        | ATMOS           | 1                  | 2   | TEST-SIM    | NA          | NOTE 1                                                                                                                                                                                                                                     |
| MANUFACTURER: PYCO                    | ABNORMAL:                                                                                                                                                               | 2               | 2               | 1                  | 2,4 | AN+DATA     | NA          |                                                                                                                                                                                                                                            |
| MODEL NO.: 122-4030-04-2.7-6          | ACCIDENT:                                                                                                                                                               | 40              | 65 [R2]         | 1                  | 2   | TEST-SIM    | YES         |                                                                                                                                                                                                                                            |
| SAFETY FUNCTION: - - -                | RH (%):                                                                                                                                                                 | 90              | 100             | 1                  | 2   | TEST-SIM    | NA          | NOTE 1                                                                                                                                                                                                                                     |
| MONITORING SUPPRESSION POOL           | ABNORMAL:                                                                                                                                                               | 90 [R2]         | 100             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| AREA TEMPERATURE [R1]                 | ACCIDENT:                                                                                                                                                               | 100             | STEAM           | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| OP. CODE: A                           | RADIATION:                                                                                                                                                              |                 |                 |                    |     |             |             | NOTE 1                                                                                                                                                                                                                                     |
|                                       | NORM GAMMA:                                                                                                                                                             |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                            |
|                                       | ACC GAMMA:                                                                                                                                                              | 5.5E7           | 2.2E8           | 4                  | 2   | TEST-SIM    | YES         | NOTE 6                                                                                                                                                                                                                                     |
|                                       | NORM BETA:                                                                                                                                                              |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                            |
|                                       | ACC BETA:                                                                                                                                                               |                 |                 |                    |     |             | YES         |                                                                                                                                                                                                                                            |
|                                       | NEUTRON:                                                                                                                                                                |                 |                 |                    |     |             | NA          |                                                                                                                                                                                                                                            |
|                                       | SPRAY:                                                                                                                                                                  | YES             | YES             | 1                  | 2   | TEST-SIM    | NA          |                                                                                                                                                                                                                                            |
| ACCURACY - -                          | SUBMERGENCE:                                                                                                                                                            | <2 SEC          | 10 SEC          | 1                  | 2,4 | AN + DATA   | NA          |                                                                                                                                                                                                                                            |
| SPEC: +/-1.2F NOTE 5                  |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| DEMO: +/-1.2F                         |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| ZONE NO.: PC215121                    |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| SUBMERGENCE: YES                      |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| SPRAY: YES                            |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| DOCUMENTATION ACCEPTABILITY:          | DOCUMENT REFERENCE:                                                                                                                                                     |                 |                 |                    |     |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |
| ACCEPTABLE TO NUREG 0588,CAT I        | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                           |                 |                 |                    |     |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |
|                                       | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                          |                 |                 |                    |     |             |             | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |
|                                       | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C13                                                                                                              |                 |                 |                    |     |             |             | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |
|                                       | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                   |                 |                 |                    |     |             |             | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
|                                       | NOTES: (CONT.)                                                                                                                                                          |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|                                       | 6.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 5.5E7 RADS. |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| MAINT/SURVEILL - - -                  | 7.RTD IS QUALIFIED TO OPERATE AT 150 DEGREES F. QUALIFIED LIFE IS BASED ON AN AVERAGE TEMPERATURE OF 140 DEGREES F.                                                     |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| REFERENCE: 2 (NOTE 4)                 |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| QUALIFIED LIFE - - -                  |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| (YEARS): 40                           |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
| REFERENCE: 2,4                        |                                                                                                                                                                         |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |
|                                       | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                            |                 |                 |                    |     |             |             |                                                                                                                                                                                                                                            |



QUAL REF #\_C041DCN\_\_\_\_ REV 2

19-Mar-86

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                     | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                               |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           | PARAMETER                                                                                                                                                                | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN | REMARKS                                                                                                                                                                                                                                   |
|                                           |                                                                                                                                                                          |                 |                 | SPECIFIED          | QUALIFIED |             | DEMO   |                                                                                                                                                                                                                                           |
| EQUIP NO.: 2CMS*TE124                     | OP.TIME:                                                                                                                                                                 | 100 DAYS        | >100 DAYS       | 3                  | 2         | AN+DATA     | YES    | NOTE 3                                                                                                                                                                                                                                    |
| SPEC NO.: C041D                           | TEMP (F):                                                                                                                                                                |                 |                 |                    |           |             |        | NOTE 1                                                                                                                                                                                                                                    |
| SYSTEM: CONTAINMENT MONITORING SYSTEM     | NORMAL                                                                                                                                                                   | 150/135         | 140 [R2]        | 1                  | 2,4       | TEST-SIM    | NA     | NOTE 2, 7                                                                                                                                                                                                                                 |
|                                           | ABNORMAL                                                                                                                                                                 | 190             | 190             | 1                  | 2,4       | TEST-SIM    | NA     |                                                                                                                                                                                                                                           |
|                                           | ACCIDENT                                                                                                                                                                 | 270             | 400             | 1                  | 2         | TEST-SIM    | YES    |                                                                                                                                                                                                                                           |
| TYPE: (DESCRIPTION)                       | PRESS(PSIG)                                                                                                                                                              |                 |                 |                    |           |             |        | NOTE 1                                                                                                                                                                                                                                    |
| RESISTANCE TEMPERATURE DETECTOR (RTD)     | NORMAL                                                                                                                                                                   | .5 TO 1.0       | ATMOS           | 1                  | 2         | TEST-SIM    | NA     |                                                                                                                                                                                                                                           |
|                                           | ABNORMAL                                                                                                                                                                 | 2               | 2               | 1                  | 2,4       | AN+DATA     | NA     |                                                                                                                                                                                                                                           |
| MANUFACTURER: PYCO                        | ACCIDENT                                                                                                                                                                 | 40              | 65 [R2]         | 1                  | 2         | TEST-SIM    | YES    |                                                                                                                                                                                                                                           |
|                                           | RH (%)                                                                                                                                                                   |                 |                 |                    |           |             |        | NOTE 1                                                                                                                                                                                                                                    |
| MODEL NO.: 122-4030-04-2.7-6              | NORMAL                                                                                                                                                                   | 90              | 100             | 1                  | 2         | TEST-SIM    | NA     |                                                                                                                                                                                                                                           |
|                                           | ABNORMAL                                                                                                                                                                 | 90 [R2]         | 100             | 1                  | 2         | TEST-SIM    | NA     |                                                                                                                                                                                                                                           |
| SAFETY FUNCTION: - - -                    | ACCIDENT                                                                                                                                                                 | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA     |                                                                                                                                                                                                                                           |
| MONITORING SUPP. CHAMBER AREA TEMPERATURE | RADIATION:                                                                                                                                                               |                 |                 |                    |           |             |        | NOTE 1                                                                                                                                                                                                                                    |
|                                           | NORM GAMMA                                                                                                                                                               |                 |                 |                    |           |             | NA     |                                                                                                                                                                                                                                           |
|                                           | ACC GAMMA                                                                                                                                                                | 5.5E7           | 2.2E8           | 4                  | 2         | TEST-SIM    | YES    | NOTE 6                                                                                                                                                                                                                                    |
|                                           | NORM BETA                                                                                                                                                                |                 |                 |                    |           |             | NA     |                                                                                                                                                                                                                                           |
|                                           | ACC BETA                                                                                                                                                                 |                 |                 |                    |           |             | YES    |                                                                                                                                                                                                                                           |
|                                           | NEUTRON                                                                                                                                                                  |                 |                 |                    |           |             | NA     |                                                                                                                                                                                                                                           |
| OP. CODE: A -                             | SPRAY                                                                                                                                                                    | YES             | YES             | 1                  | 2         | TEST-SIM    | NA     |                                                                                                                                                                                                                                           |
|                                           | SUBMERGENCE                                                                                                                                                              | <2 SEC          | 10 SEC          | 1                  | 2,4       | AN + DATA   | NA     |                                                                                                                                                                                                                                           |
| ACCURACY - -                              |                                                                                                                                                                          |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
| SPEC: +/-1.2F (NOTE 5)                    |                                                                                                                                                                          |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
| DEMO: +/-1.2F                             |                                                                                                                                                                          |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
| ZONE NO.: PC215121                        |                                                                                                                                                                          |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
| SUBMERGENCE: YES                          |                                                                                                                                                                          |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
| SPRAY: YES                                |                                                                                                                                                                          |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
|                                           | DOCUMENT REFERENCE:                                                                                                                                                      |                 |                 |                    |           |             |        | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                              |
|                                           | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]                                                                            |                 |                 |                    |           |             |        | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                    |
|                                           | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                                                                                           |                 |                 |                    |           |             |        | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                              |
|                                           | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.33-2-C13                                                                                                               |                 |                 |                    |           |             |        | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                             |
|                                           | 4. SWEC CALCULATION NO. 12177-EQS-029                                                                                                                                    |                 |                 |                    |           |             |        | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF <+/-1.0 F THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
| DOCUMENTATION ACCEPTABILITY:              |                                                                                                                                                                          |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
| ACCEPTABLE TO NUREG 0588,CAT I            | NOTES: (CONT.)                                                                                                                                                           |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
|                                           | 16.COMBINED RADIATION FOR GAMMA, BETA AND NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION IS 5.5E7 RADS. |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
| MAINT/SURVEILL - - -                      | 17.RTD IS QUALIFIED TO OPERATE AT 150 DEGREES F,                                                                                                                         |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
| REFERENCE: 2 (NOTE 4)                     | QUALIFIED LIFE IS BASED ON AN AVERAGE TEMPERATURE OF 140 DEGREES F.                                                                                                      |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
| QUALIFIED LIFE - - -                      |                                                                                                                                                                          |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
| (YEARS): 40                               |                                                                                                                                                                          |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
| REFERENCE: 2,4                            |                                                                                                                                                                          |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |
|                                           | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                             |                 |                 |                    |           |             |        |                                                                                                                                                                                                                                           |



ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |     |             |             |         |
|--------------------------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----|-------------|-------------|---------|
|                                                              | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |     | QUAL METHOD | MARGIN DEMO | REMARKS |
| EQUIP NO.: 2SFC*TE8A                                         | OP. TIME:                                  | 100DAYS         | >100 DAYS       | 3                  | 2   | AN+DATA     | YES         | NOTE 3  |
| SPEC NO.: C041D                                              | TEMP (F):                                  |                 |                 |                    |     |             |             | NOTE 1  |
| SYSTEM: SPENT FUEL POOL                                      | NORMAL                                     | 104/93          | 140 [R2]        | 1                  | 2,4 | TEST-SIM    | NA          | NOTE 2  |
| COOLING AND CLEAN-UP                                         | ABNORMAL                                   | 106             | 190             | 1                  | 2,4 | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)                                          | ACCIDENT                                   | 200             | 400             | 1                  | 2   | TEST-SIM    | YES         |         |
| RESISTANCE TEMPERATURE DETECTOR (RTD)                        | PRESS (PSIG)                               |                 |                 |                    |     |             |             | NOTE 1  |
|                                                              | NORMAL                                     | -0.25"WG        | ATMOS           | 1                  | 2   | TEST-SIM    | NA          |         |
|                                                              | ABNORMAL                                   | -0.25"WG        | ATMOS           | 1                  | 2   | TEST-SIM    | NA          |         |
| MANUFACTURER: PYCO                                           | ACCIDENT                                   | 2.8             | 65 [R2]         | 1                  | 2   | TEST-SIM    | YES         |         |
| MODEL NO.: 122-4030-04-2.7-9                                 | RH (%):                                    |                 |                 |                    |     |             |             | NOTE 1  |
|                                                              | NORMAL                                     | 50              | 100             | 1                  | 2   | TEST-SIM    | NA          |         |
|                                                              | ABNORMAL                                   | 50              | 100             | 1                  | 2   | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -                                       | ACCIDENT                                   | 100             | STEAM           | 1                  | 2   | TEST-SIM    | NA          |         |
| MONITORING SF POOL HT EXCH OUT TEMPERATURE                   | RADIATION:                                 |                 |                 |                    |     |             |             | NOTE 1  |
|                                                              | NORM GAMMA                                 | 2E6             |                 | 1                  |     |             | NA          |         |
|                                                              | ACC GAMMA                                  | 5.8E7           | 2.2E8           | 1                  | 2   | TEST-SIM    | YES         |         |
| OP. CODE: A                                                  | NORM BETA                                  | NA              |                 | 1                  |     |             | NA          |         |
|                                                              | ACC BETA                                   | 6.1E6           |                 | 1                  |     |             | YES         |         |
|                                                              | NEUTRON                                    | NA              |                 | 1                  |     |             | NA          |         |
|                                                              | SPRAY                                      | NA              | YES             | NA                 | 2   | TEST-SIM    | NA          |         |
| ACCURACY - -                                                 | SUBMERGENCE                                | NA              | NA              | NA                 | NA  | NA          | NA          |         |
| SPEC: +/-1.2F (NOTE 5)                                       |                                            |                 |                 |                    |     |             |             |         |
| DEMO: +/-1.2F                                                |                                            |                 |                 |                    |     |             |             |         |
| ZONE NO.: SC215122                                           |                                            |                 |                 |                    |     |             |             |         |
| SUBMERGENCE:                                                 |                                            |                 |                 |                    |     |             |             |         |
| SPRAY:                                                       |                                            |                 |                 |                    |     |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                |                                            |                 |                 |                    |     |             |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0508, CAT I |                                            |                 |                 |                    |     |             |             |         |
| MAINT/SURVEILL - - -                                         |                                            |                 |                 |                    |     |             |             |         |
| REFERENCE: 2 (NOTE 4)                                        |                                            |                 |                 |                    |     |             |             |         |
| QUALIFIED LIFE - - -                                         |                                            |                 |                 |                    |     |             |             |         |
| (YEARS): 40                                                  |                                            |                 |                 |                    |     |             |             |         |
| REFERENCE: 2,4                                               |                                            |                 |                 |                    |     |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION                 |                                            |                 |                 |                    |     |             |             |         |

- DOCUMENT REFERENCE:
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2]
  2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 3 THRU 6
  3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 34-2-C3
  4. SWEC CALCULATION NO. 12177-EQS-029

- NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
  3. OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.
  4. TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.
  5. FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.
  6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                   | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                    |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
|--------------------------------|-------------------|-----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------|
|                                |                   | PARAMETER                                                                                     | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                                                                                                                                                                           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                   |                                                                                               |                    |                    | SPECIFIED          | QUALIFIED                                                                                                                                                                                                                                 |                |                |         |
| EQUIP NO.:                     | 2SFC*TE8B         | OP.TIME:                                                                                      | 100 DAYS           | >100 DAYS          | 3                  | 2                                                                                                                                                                                                                                         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                      | C041D             | TEMP (F):                                                                                     | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                        | SPENT FUEL POOL   | NORMAL                                                                                        | 104/93             | 140 [R2]           | 1                  | 2,4                                                                                                                                                                                                                                       | TEST-SIM       | NA             | NOTE 2  |
|                                | COOLING AND       | ABNORMAL                                                                                      | 105                | 190                | 1                  | 2,4                                                                                                                                                                                                                                       | TEST-SIM       | NA             |         |
|                                | CLEAN-UP          | ACCIDENT                                                                                      | 200                | 400                | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)            |                   | PRESS (PSIG)                                                                                  | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                   | - - - -        | - - - -        | NOTE 1  |
| RESISTANCE TEMPERATURE         |                   | NORMAL                                                                                        | -0.25"WG           | ATMOS              | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |
| DETECTOR (RTD)                 |                   | ABNORMAL                                                                                      | -0.25"WG           | ATMOS              | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |
| MANUFACTURER: PYCO             |                   | ACCIDENT                                                                                      | 2.8                | 65 [R2]            | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | YES            |         |
|                                |                   | RH (%)                                                                                        | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                     | 122-4030-04-2.7-9 | NORMAL                                                                                        | 50                 | 100                | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |
|                                |                   | ABNORMAL                                                                                      | 50                 | 100                | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -         |                   | ACCIDENT                                                                                      | 100                | STEAM              | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |
| MONITORING SF POOL HT EXCH     |                   | RADIATION:                                                                                    | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                   | - - - -        | - - - -        | NOTE 1  |
| OUT TEMPERATURE                |                   | NORM GAMMA                                                                                    | 2E6                |                    | 1                  |                                                                                                                                                                                                                                           |                | NA             |         |
|                                |                   | ACC GAMMA                                                                                     | 5.8E7              | 2.2E8              | 1                  | 2                                                                                                                                                                                                                                         | TEST-SIM       | YES            |         |
| OP. CODE: A                    |                   | NORM BETA                                                                                     | NA                 |                    | 1                  |                                                                                                                                                                                                                                           |                | NA             |         |
|                                |                   | ACC BETA                                                                                      | 6.1E6              |                    | 1                  |                                                                                                                                                                                                                                           |                | YES            |         |
|                                |                   | NEUTRON                                                                                       | NA                 |                    | 1                  |                                                                                                                                                                                                                                           |                | NA             |         |
|                                |                   | SPRAY                                                                                         | NA                 | YES                | NA                 | 2                                                                                                                                                                                                                                         | TEST-SIM       | NA             |         |
| ACCURACY - -                   |                   | SUBMERGENCE                                                                                   | NA                 | NA                 | NA                 | NA                                                                                                                                                                                                                                        | NA             | NA             |         |
| SPEC: +/-1.2F (NOTE 5)         |                   |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
| DEMO: +/-1.2F                  |                   |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
| ZONE NO.:                      | SC215122          |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
| SUBMERGENCE:                   |                   | DOCUMENT REFERENCE:                                                                           |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                              |                |                |         |
| SPRAY:                         |                   | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2] |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                    |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                   | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                |                    |                    |                    | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                              |                |                |         |
| SUBMERGENCE OR SPRAY           |                   | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.34-2-C3                                     |                    |                    |                    | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                             |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                   | 4. SWEC CALCULATION NO. 12177-EQS-029                                                         |                    |                    |                    | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF +/-1.0 F. THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                   |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
|                                |                   |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
|                                |                   |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
| MAINT/SURVEILL - - -           |                   |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
| REFERENCE: 2 (NOTE 4)          |                   |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
|                                |                   |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
| QUALIFIED LIFE - - -           |                   |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
| (YEARS): 40                    |                   |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
| REFERENCE: 2,4                 |                   |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
|                                |                   |                                                                                               |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |
|                                |                   | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                  |                    |                    |                    |                                                                                                                                                                                                                                           |                |                |         |



QUAL REF # C041DCQ REV 2

19-Feb-86

| EQUIPMENT DESCRIPTION           |                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION   |                    |                    |                    |           |                |                |         |
|---------------------------------|------------------------|----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 |                        | PARAMETER                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                        |                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                      | 2SFC*TE31A             | OP.TIME:                                     | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                       | C041D                  | TEMP (F):                                    |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM:                         | SPENT FUEL POOL        | NORMAL                                       | 104/98             | 140 [R2]           | 1                  | 2, 4      | TEST-SIM       | NA             | NOTE 2  |
|                                 | COOLING AND            | ABNORMAL                                     | 197                | 197                | 1                  | 2, 4      | TEST-SIM       | NA             |         |
|                                 | CLEAN-UP               | ACCIDENT                                     | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)             | RESISTANCE TEMPERATURE | PRESS (PSIG)                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                 | DETECTOR (RTD)         | NORMAL                                       | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 |                        | ABNORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                   | PYCO                   | ACCIDENT                                     | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                 |                        | RH (%)                                       |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                      | 122-4030-04-2.7-9      | NORMAL                                       | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 |                        | ABNORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                | - - -                  | ACCIDENT                                     | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| MONITORING SF POOL SURGE TANK   | OUTLET TEMPERATURE     | RADIATION:                                   |                    |                    |                    |           |                |                | NOTE 1  |
|                                 |                        | NORM GAMMA                                   | 2E6                |                    | 1                  |           |                | NA             |         |
|                                 |                        | ACC GAMMA                                    | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                       | A                      | NORM BETA                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 |                        | ACC BETA                                     | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                 |                        | NEUTRON                                      | NA                 |                    | 1                  |           |                | NA             |         |
|                                 |                        | SPRAY                                        | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                    |                        | SUBMERGENCE                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                           | +/-1.2F (NOTE 5)       |                                              |                    |                    |                    |           |                |                |         |
| DEMO:                           | +/-1.2F                |                                              |                    |                    |                    |           |                |                |         |
| ZONE NO.:                       | SC328193               |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                    |                        |                                              |                    |                    |                    |           |                |                |         |
| SPRAY:                          |                        |                                              |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                        |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |                        |                                              |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                        |                                              |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                        |                                              |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |                        |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)           |                        |                                              |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                        |                                              |                    |                    |                    |           |                |                |         |
| (YEARS): 40                     |                        |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2, 4                 |                        |                                              |                    |                    |                    |           |                |                |         |
|                                 |                        | [R2] INDICATES CHANGES MADE IN THIS REVISION |                    |                    |                    |           |                |                |         |

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3. OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.

4. TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.

5. FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY.

6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.



| EQUIPMENT DESCRIPTION          |                 | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                    |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
|--------------------------------|-----------------|-----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                |                 | PARAMETER                                                                                     | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                    |
|                                |                 |                                                                                               |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                            |
| EQUIP NO.:                     | 2SFC*TE31B      | OP.TIME:                                                                                      | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3                                                                                                                                                                                                                                     |
| SPEC NO.:                      | C041D           | TEMP (F):                                                                                     |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                     |
| SYSTEM:                        | SPENT FUEL POOL | NORMAL                                                                                        | 120/109            | 140 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                     |
|                                | COOLING AND     | ABNORMAL                                                                                      | 123                | 197                | 1                  | 2,4       | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
|                                | CLEAN-UP        | ACCIDENT                                                                                      | 175                | 400                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                            |
| TYPE: (DESCRIPTION)            |                 | PRESS(PSIG)                                                                                   |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                     |
| RESISTANCE TEMPERATURE         |                 | NORMAL                                                                                        | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| DETECTOR (RTD)                 |                 | ABNORMAL                                                                                      | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| MANUFACTURER: PYCO             |                 | ACCIDENT                                                                                      | 2.8                | 65 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                            |
|                                |                 | RH (%)                                                                                        |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                     |
| MODEL NO.:122-4030-04-2.7-9    |                 | NORMAL                                                                                        | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
|                                |                 | ABNORMAL                                                                                      | 90                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| SAFETY FUNCTION: - - -         |                 | ACCIDENT                                                                                      | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| MONITORING SF POOL SURGE TANK  |                 | RADIATION:                                                                                    |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                     |
| OUTLET TEMPERATURE             |                 | NORM GAMMA                                                                                    | 1.0E6              |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                            |
|                                |                 | ACC GAMMA                                                                                     | 5.0E5              | 2.2E8              | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                            |
| OP. CODE: A                    |                 | NORM BETA                                                                                     | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                            |
|                                |                 | ACC BETA                                                                                      | 6.1E6              |                    | 1                  |           |                | YES            |                                                                                                                                                                                                                                            |
|                                |                 | NEUTRON                                                                                       | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                            |
|                                |                 | SPRAY                                                                                         | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                            |
| ACCURACY - -                   |                 | SUBMERGENCE                                                                                   | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                            |
| SPEC: +/-1.2F (NOTE 5)         |                 |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| DEMO: +/-1.2F                  |                 |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| ZONE NO.:                      | SC328221        |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| SUBMERGENCE:                   |                 | DOCUMENT REFERENCE:                                                                           |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                               |
| SPRAY:                         |                 | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R2] |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                     |
| EQUIPMENT NOT SUBJECT TO       |                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07-145-5003 B THRU G                |                    |                    |                    |           |                |                | 3.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                                                                                               |
| SUBMERGENCE OR SPRAY           |                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO.34-2-CS                                     |                    |                    |                    |           |                |                | 4.TERMINAL HEAD GASKET MUST BE REPLACED WITH A NEW GASKET WHENEVER HEAD COVER IS REMOVED, IN ORDER TO MAINTAIN QUALIFICATION.                                                                                                              |
| DOCUMENTATION ACCEPTABILITY:   |                 | 4. SWEC CALCULATION NO. 12177-EQS-029                                                         |                    |                    |                    |           |                |                | 5.FACTORY CERTIFICATION TESTING OF RTD'S HAS DEMONSTRATED ACCURACY OF (+/-1.0 F) THE QUALIFICATION TYPE TESTING HAS SHOWN AN ACCURACY OF +/-1.2 F. A REVIEW OF THE SETPOINT CALCULATIONS HAS SHOWN THAT +/-1.2F IS AN ACCEPTABLE ACCURACY. |
| ACCEPTABLE TO NUREG 0580,CAT I |                 |                                                                                               |                    |                    |                    |           |                |                | 6. RTD REQUIRES QUALIFIED CONDUIT SEAL TO MAINTAIN QUALIFICATION. USE CONAX "ECSA" OR EQUIVALENT.                                                                                                                                          |
| MAINT/SURVEILL - - -           |                 |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| REFERENCE: 2 (NOTE 4)          |                 |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| QUALIFIED LIFE - - -           |                 |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| (YEARS): 40                    |                 |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
| REFERENCE: 2,4                 |                 |                                                                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |
|                                |                 | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                            |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |            | PARAMETER    |            | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS     |
|--------------------------------|------------|--------------|------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|-------------|
|                                |            |              |            |                 |                 | SPECIFIED          | QUALIFIED |             |             |             |
| EQUIP NO.:                     | 2CSL*FV114 | OP.TIME:     | 100 DAYS   | >100DAYS[R2]    | 3               | 2,4                |           | AN + DATA   | YES         | NOTE 4      |
| SPEC NO.:                      | C051M      | TEMP (F):    |            |                 |                 |                    |           |             |             | NOTE 1      |
| SYSTEM:                        |            | NORMAL       | 104/85     | 122             | 1               | 2                  |           | TEST-SIM    | NA          | NOTE 2      |
| LOW PRESSURE CORE SPRAY        |            | ABNORMAL     | 92         | 122             | 1               | 2                  |           | TEST-SIM    | NA          |             |
| TYPE: (DESCRIPTION)            |            | ACCIDENT     | 300 [R2]   | 340 [R2]        | 1               | 5 [R2]             |           | TEST-SIM    | YES         | NOTE 5 [R2] |
| MOTOR OPERATED VALVE,          |            | PRESS (PSIG) |            |                 |                 |                    |           |             |             | NOTE 1      |
| RELIANCE AC MOTOR, CLASS RH    |            | NORMAL       | -.25"WG    | 0               | 1               | 2                  |           | TEST-SIM    | NA          |             |
| INSULATION                     |            | ABNORMAL     | NA         | 0               | 1               | 2                  |           | TEST-SIM    | NA          |             |
| MANUFACTURER: LIMITORQUE       |            | ACCIDENT     | 2.8        | 25              | 1               | 2                  |           | TEST-SIM    | YES         |             |
| MODEL NO.:                     | SMB-00-5   | RH (%):      |            |                 |                 |                    |           |             |             | NOTE 1      |
| SAFETY FUNCTION: - - -         |            | NORMAL       | 50         | 100             | 1               | 2                  |           | TEST-SIM    | NA          |             |
| LPCS TEST BYPASS               |            | ABNORMAL     | NA         | 100             | 1               | 2                  |           | TEST-SIM    | NA          |             |
|                                |            | ACCIDENT     | 100        | STEAM           | 1               | 2,5                |           | TEST-SIM    | NA          |             |
| OP. CODE: A                    |            | RADIATION:   |            |                 |                 |                    |           |             |             | NOTE 1      |
|                                |            | NORM GAMMA   | 7.7E5      |                 | 1               |                    |           | TEST-SIM    | NA          |             |
|                                |            | ACC GAMMA    | 1.0E8 [R2] | 1.66E8          | 1               | 5                  |           | TEST-SIM    | YES         | NOTE 5      |
|                                |            | NORM BETA    | NA         | -               | 1               |                    |           |             | NA          |             |
|                                |            | ACC BETA     | 6.1E6      | -               | 1               |                    |           | AN+DATA     | YES         |             |
|                                |            | NEUTRON      | NA         | -               | 1               |                    |           |             | NA          |             |
| ACCURACY - -                   |            | SPRAY        | NA         | NA              | NA              | NA                 |           | NA          | NA          |             |
| SPEC: NA                       |            | SUBMERGENCE  | NA         | NA              | NA              | NA                 |           | NA          | NA          |             |
| DEMO: NA                       |            |              |            |                 |                 |                    |           |             |             |             |
| ZONE NO.:                      | SC175103   |              |            |                 |                 |                    |           |             |             |             |
| SUBMERGENCE:                   | NA         |              |            |                 |                 |                    |           |             |             |             |
| SPRAY:                         | NA         |              |            |                 |                 |                    |           |             |             |             |
| EQUIPMENT NOT SUBJECT TO       |            |              |            |                 |                 |                    |           |             |             |             |
| SUBMERGENCE OR SPRAY           |            |              |            |                 |                 |                    |           |             |             |             |
| DOCUMENTATION ACCEPTABILITY:   |            |              |            |                 |                 |                    |           |             |             |             |
| ACCEPTABLE TO NUREG 0588,CAT 1 |            |              |            |                 |                 |                    |           |             |             |             |
| MAINT/SURVEILL - - -           |            |              |            |                 |                 |                    |           |             |             |             |
| REFERENCE: 2                   |            |              |            |                 |                 |                    |           |             |             |             |
| QUALIFIED LIFE - - -           |            |              |            |                 |                 |                    |           |             |             |             |
| (YEARS): 20 (SEE NOTE 3)       |            |              |            |                 |                 |                    |           |             |             |             |
| REFERENCE: 2,4                 |            |              |            |                 |                 |                    |           |             |             |             |

[R2] INDICATES CHANGES MADE IN THIS REVISION.





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          |                           | PARAMETER    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS     |
|----------------------------------------------------------------|---------------------------|--------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------|
|                                                                |                           |              |                    |                    | SPECIFIED          | QUALIFIED |                |                |             |
| EQUIP NO.:                                                     | 2ICS*ADV109               | OP.TIME:     | 12 HRS             | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 3      |
| SPEC NO.:                                                      | C051M                     | TEMP (F):    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1      |
| SYSTEM:                                                        | REACTOR CORE<br>ISOLATION | NORMAL       | 120/85             | 140                | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2      |
|                                                                |                           | ABNORMAL     | 86                 | 268                | 1                  | 2,4       | TEST-SIM       | NA             |             |
| TYPE: (DESCRIPTION)                                            |                           | ACCIDENT     | 175 [R2]           | 346                | 1                  | 2,4       | TEST-SIM       | YES            | NOTE 4 [R2] |
| SOLENOID VALVE                                                 |                           | PRESS (PSIG) | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1      |
|                                                                |                           | NORMAL       | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                                |                           | ABNORMAL     | NA                 | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |             |
| MANUFACTURER:                                                  | ASCO                      | ACCIDENT     | 1.5 [R2]           | 110                | 1                  | 2         | TEST-SIM       | YES            | NOTE 4 [R2] |
|                                                                |                           | RH (%):      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1      |
| MODEL NO.:                                                     | 206-380-3RF               | NORMAL       | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                                |                           | ABNORMAL     | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA             |             |
| SAFETY FUNCTION:                                               | - - -                     | ACCIDENT     | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |             |
| TURBINE EXH. DR. ISOLATION<br>VALVE                            |                           | RADIATION:   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1      |
|                                                                |                           | NORM GAMMA   | 2.4E4              |                    | 1                  |           |                | NA             |             |
|                                                                |                           | ACC GAMMA    | 1.2E6              | 2.0E8              | 1                  | 2         | TEST-SIM       | YES            | NOTE 4      |
| OP. CODE:                                                      | A                         | NORM BETA    | NA                 |                    | 1                  |           |                | NA             |             |
|                                                                |                           | ACC BETA     | 6.2E4              |                    | 1                  |           |                | YES            | NOTE 4      |
|                                                                |                           | NEUTRON      | NA                 |                    | 1                  |           |                | NA             |             |
|                                                                |                           | SPRAY        | NA                 | NA                 | NA                 | NA        | NA             | NA             |             |
| ACCURACY - -                                                   |                           | SUBMERGENCE  | NA                 | NA                 | NA                 | NA        | NA             | NA             |             |
| SPEC:                                                          | NA                        |              |                    |                    |                    |           |                |                |             |
| DEMO:                                                          | NA                        |              |                    |                    |                    |           |                |                |             |
| ZONE NO.:                                                      | SC175106                  |              |                    |                    |                    |           |                |                |             |
| SUBMERGENCE:                                                   | NA                        |              |                    |                    |                    |           |                |                |             |
| SPRAY:                                                         | NA                        |              |                    |                    |                    |           |                |                |             |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY               |                           |              |                    |                    |                    |           |                |                |             |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT 1 |                           |              |                    |                    |                    |           |                |                |             |
|                                                                |                           |              |                    |                    |                    |           |                |                |             |
| MAINT/SURVEILL - - -<br>REFERENCE: 4,5                         |                           |              |                    |                    |                    |           |                |                |             |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2,4          |                           |              |                    |                    |                    |           |                |                |             |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5004D [R1]
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-6-C5
- CALCULATION NO. 12177-EQS-16
- ASCO INSTALLATION AND MAINTENANCE INSTRUCTION FORM V-5969 AND V-5999

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 32 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN, BY ANALYSIS.  
4.PER APPENDIX B OF REFERENCE 1.

[R2] INDICATES CHANGES MADE IN THIS REVISION



| EQUIPMENT DESCRIPTION                         |                           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |         |                |                |             |
|-----------------------------------------------|---------------------------|--------------------------------------------|--------------------|--------------------|--------------------|---------|----------------|----------------|-------------|
|                                               |                           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |         | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS     |
| SPECIFIED                                     | QUALIFIED                 |                                            |                    |                    |                    |         |                |                |             |
| EQUIP NO.:                                    | 2ICS*ADV110               | OP.TIME:                                   | 12 HRS             | >100 DAYS          | 3                  | 4       | AN+DATA        | YES            | NOTE 3      |
| SPEC NO.:                                     | C051M                     | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - - | - - - -        | - - - -        | NOTE 1      |
| SYSTEM:                                       | REACTOR CORE<br>ISOLATION | NORMAL                                     | 120/85             | 194                | 1                  | 2       | TEST-SIM       | NA             | NOTE 2      |
|                                               |                           | ABNORMAL                                   | 86                 | 194                | 1                  | 2       | TEST-SIM       | NA             |             |
| TYPE: (DESCRIPTION)                           | LIMIT SWITCH              | ACCIDENT                                   | 175 [R2]           | 380                | 1                  | 2       | TEST-SIM       | YES            | NOTE 4 [R2] |
|                                               |                           | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - - | - - - -        | - - - -        | NOTE 1      |
|                                               |                           | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2       | TEST-SIM       | NA             |             |
|                                               |                           | ABNORMAL                                   | NA                 | ATMOS              | 1                  | 2       | TEST-SIM       | NA             |             |
| MANUFACTURER:                                 | NAMCO                     | ACCIDENT                                   | 1.5 [R2]           | 100                | 1                  | 2       | TEST-SIM       | YES            | NOTE 4 [R2] |
|                                               |                           | RH (%)                                     | - - - -            | - - - -            | - - - -            | - - - - | - - - -        | - - - -        | NOTE 1      |
| MODEL NO.:                                    | EA740                     | NORMAL                                     | 50                 | 100                | 1                  | 2       | TEST-SIM       | NA             |             |
|                                               |                           | ABNORMAL                                   | NA                 | 100                | 1                  | 2       | TEST-SIM       | NA             |             |
| SAFETY FUNCTION:                              | - - -                     | ACCIDENT                                   | 100                | STEAM              | 1                  | 2       | TEST-SIM       | NA             |             |
| INDICATE POSITION OF TURB.                    |                           | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - - | - - - -        | - - - -        | NOTE 1      |
| EXH DR ISOLATION VALVE                        |                           | NORM GAMMA                                 | 2.4E4              |                    | 1                  |         |                | NA             |             |
|                                               |                           | ACC GAMMA                                  | 1.2E6              | 2.04E8             | 1                  | 2       | TEST-SIM       | YES            | NOTE 4      |
| OP. CODE:                                     | A                         | NORM BETA                                  | NA                 |                    | 1                  |         |                | NA             |             |
|                                               |                           | ACC BETA                                   | 6.2E4              |                    | 1                  |         |                | YES            | NOTE 4      |
|                                               |                           | NEUTRON                                    | NA                 |                    | 1                  |         |                | NA             |             |
|                                               |                           | SPRAY                                      | NA                 | NA                 | NA                 | NA      | NA             | NA             |             |
| ACCURACY - -                                  |                           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA      | NA             | NA             |             |
| SPEC:                                         | NA                        |                                            |                    |                    |                    |         |                |                |             |
| DEMO:                                         | NA                        |                                            |                    |                    |                    |         |                |                |             |
| ZONE NO.:                                     | SC175106                  |                                            |                    |                    |                    |         |                |                |             |
| SUBMERGENCE:                                  | NA                        |                                            |                    |                    |                    |         |                |                |             |
| SPRAY:                                        | NA                        |                                            |                    |                    |                    |         |                |                |             |
| EQUIPMENT NOT SUBJECT TO                      |                           |                                            |                    |                    |                    |         |                |                |             |
| SUBMERGENCE OR SPRAY                          |                           |                                            |                    |                    |                    |         |                |                |             |
| DOCUMENTATION ACCEPTABILITY:                  |                           |                                            |                    |                    |                    |         |                |                |             |
| ACCEPTABLE TO NUREG 0588,CAT I                |                           |                                            |                    |                    |                    |         |                |                |             |
| MAINT/SURVEILL - - -                          |                           |                                            |                    |                    |                    |         |                |                |             |
| REFERENCE: 2                                  |                           |                                            |                    |                    |                    |         |                |                |             |
| QUALIFIED LIFE - - -                          |                           |                                            |                    |                    |                    |         |                |                |             |
| (YEARS): 16.8 [R2]                            |                           |                                            |                    |                    |                    |         |                |                |             |
| REFERENCE: 2                                  |                           |                                            |                    |                    |                    |         |                |                |             |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                           |                                            |                    |                    |                    |         |                |                |             |

DOCUMENT REFERENCE:

1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5005A
3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-6-CS
4. CALCULATION NO. 12177-EQS-059 [R2]

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN, BY ANALYSIS.  
4.PER APPENDIX 1 OF REFERENCE 1.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       |                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION    |                    |                    |                    |           |                |                 |             |
|-------------------------------------------------------------|------------------------|-----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|-------------|
|                                                             |                        | PARAMETER                                     | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN:<br>DEMO | REMARKS     |
|                                                             |                        |                                               |                    |                    | SPECIFIED          | QUALIFIED |                |                 |             |
| EQUIP NO.:                                                  | 2ICS*ADV110            | OP.TIME:                                      | 12 HRS             | >100 DAYS          | 3                  | 4         | AN+DATA        | YES             | NOTE 3      |
| SPEC NO.:                                                   | C051M                  | TEMP (F):                                     | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -       | NOTE 1      |
| SYSTEM:                                                     | REACTOR CORE ISOLATION | NORMAL                                        | 120/85             | 140                | 1                  | 2,4       | TEST-SIM       | NA              | NOTE 2      |
|                                                             |                        | ABNORMAL                                      | 86                 | 268                | 1                  | 2,4       | TEST-SIM       | NA              |             |
| TYPE: (DESCRIPTION)                                         | SOLENOID VALVE         | ACCIDENT                                      | 175 [R2]           | 346                | 1                  | 2,4       | TEST-SIM       | YES             | NOTE 4 [R2] |
|                                                             |                        | PRESS(PSIG)                                   | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -       | NOTE 1      |
|                                                             |                        | NORMAL                                        | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA              |             |
|                                                             |                        | ABNORMAL                                      | NA                 | ATMOS              | 1                  | 2         | TEST-SIM       | NA              |             |
| MANUFACTURER:                                               | ASCO                   | ACCIDENT                                      | 1.5 [R2]           | 110                | 1                  | 2         | TEST-SIM       | YES             | NOTE 4 [R2] |
|                                                             |                        | RH (%) :                                      | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -       | NOTE 1      |
| MODEL NO.:                                                  | 206-380-3RF            | NORMAL                                        | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA              |             |
|                                                             |                        | ABNORMAL                                      | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA              |             |
| SAFETY FUNCTION:                                            | - - -                  | ACCIDENT                                      | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA              |             |
| TURBINE EXH. DR. ISOLATION VALVE                            |                        | RADIATION:                                    | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -       | NOTE 1      |
|                                                             |                        | NORM GAMMA:                                   | 2.4E4              |                    | 1                  |           |                | NA              |             |
|                                                             |                        | ACC GAMMA:                                    | 1.2E6              | 2.0E8              | 1                  | 2         | TEST-SIM       | YES             | NOTE 4      |
| OP. CODE:                                                   | A                      | NORM BETA                                     | NA                 |                    | 1                  |           |                | NA              |             |
|                                                             |                        | ACC BETA                                      | 6.2E4              |                    | 1                  |           |                | YES             | NOTE 4      |
|                                                             |                        | NEUTRON                                       | NA                 |                    | 1                  |           |                | NA              |             |
|                                                             |                        | SPRAY                                         | NA                 | NA                 | NA                 | NA        | NA             | NA              |             |
| ACCURACY - -                                                |                        | SUBMERGENCE:                                  | NA                 | NA                 | NA                 | NA        | NA             | NA              |             |
| SPEC: NA                                                    |                        |                                               |                    |                    |                    |           |                |                 |             |
| DEMO: NA                                                    |                        |                                               |                    |                    |                    |           |                |                 |             |
| ZONE NO.: SC175106                                          |                        |                                               |                    |                    |                    |           |                |                 |             |
| SUBMERGENCE: NA                                             |                        |                                               |                    |                    |                    |           |                |                 |             |
| SPRAY: NA                                                   |                        |                                               |                    |                    |                    |           |                |                 |             |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               |                        |                                               |                    |                    |                    |           |                |                 |             |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                        |                                               |                    |                    |                    |           |                |                 |             |
|                                                             |                        |                                               |                    |                    |                    |           |                |                 |             |
|                                                             |                        |                                               |                    |                    |                    |           |                |                 |             |
| MAINT/SURVEILL - - -                                        |                        |                                               |                    |                    |                    |           |                |                 |             |
| REFERENCE: 4,5                                              |                        |                                               |                    |                    |                    |           |                |                 |             |
|                                                             |                        |                                               |                    |                    |                    |           |                |                 |             |
| QUALIFIED LIFE - - -                                        |                        |                                               |                    |                    |                    |           |                |                 |             |
| (YEARS): 40                                                 |                        |                                               |                    |                    |                    |           |                |                 |             |
| REFERENCE: 2,4                                              |                        |                                               |                    |                    |                    |           |                |                 |             |
|                                                             |                        |                                               |                    |                    |                    |           |                |                 |             |
|                                                             |                        |                                               |                    |                    |                    |           |                |                 |             |
|                                                             |                        | [R2] INDICATES CHANGES MADE IN THIS REVISION. |                    |                    |                    |           |                |                 |             |





19-Mar-86

QUAL REF #\_C051MAD\_ REV 2

| EQUIPMENT DESCRIPTION          |                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION    |                 |                 |                    |           |             |             |             |
|--------------------------------|------------------------|-----------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|-------------|
|                                |                        | PARAMETER                                     | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS     |
|                                |                        |                                               |                 |                 | SPECIFIED          | QUALIFIED |             |             |             |
| EQUIP NO.:                     | 2ICS*AOV130            | OP.TIME:                                      | 12 HRS          | >100 DAYS       | 3                  | 4         | AN+DATA     | YES         | NOTE 3      |
| SPEC NO.:                      | C051M                  | TEMP (F):                                     |                 |                 |                    |           |             |             | NOTE 1      |
| SYSTEM:                        | REACTOR CORE ISOLATION | NORMAL                                        | 120/85          | 194             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2      |
|                                |                        | ABNORMAL                                      | 86              | 194             | 1                  | 2         | TEST-SIM    | NA          |             |
| TYPE: (DESCRIPTION)            |                        | ACCIDENT                                      | 175 [R2]        | 380             | 1                  | 2         | TEST-SIM    | YES         | NOTE 4 [R2] |
| LIMIT SWITCH                   |                        | PRESS(PSIG)                                   |                 |                 |                    |           |             |             | NOTE 1      |
|                                |                        | NORMAL                                        | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |             |
|                                |                        | ABNORMAL                                      | NA              | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |             |
| MANUFACTURER:                  | NAMCO                  | ACCIDENT                                      | 1.5 [R2]        | 100             | 1                  | 2         | TEST-SIM    | YES         | NOTE 4 [R2] |
|                                |                        | RH (%)                                        |                 |                 |                    |           |             |             | NOTE 1      |
| MODEL NO.:                     | EA740                  | NORMAL                                        | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |             |
|                                |                        | ABNORMAL                                      | NA              | 100             | 1                  | 2         | TEST-SIM    | NA          |             |
| SAFETY FUNCTION:               | - - -                  | ACCIDENT                                      | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |             |
| INDICATE POSITION OF ST LINE   |                        | RADIATION:                                    |                 |                 |                    |           |             |             | NOTE 1      |
| DR. ISOLATION VALVE            |                        | NORM GAMMA                                    | 2.4E4           |                 | 1                  |           |             | NA          |             |
|                                |                        | ACC GAMMA                                     | 1.2E6           | 2.04E8          | 1                  | 2         | TEST-SIM    | YES         | NOTE 4      |
| OP. CODE:                      | A                      | NORM BETA                                     | NA              |                 | 1                  |           |             | NA          |             |
|                                |                        | ACC BETA                                      | 6.2E4           |                 | 1                  |           |             | YES         | NOTE 4      |
|                                |                        | NEUTRON                                       | NA              |                 | 1                  |           |             | NA          |             |
|                                |                        | SPRAY                                         | NA              | NA              | NA                 | NA        | NA          | NA          |             |
| ACCURACY - -                   |                        | SUBMERGENCE                                   | NA              | NA              | NA                 | NA        | NA          | NA          |             |
| SPEC:                          | NA                     |                                               |                 |                 |                    |           |             |             |             |
| DEMO:                          | NA                     |                                               |                 |                 |                    |           |             |             |             |
| ZONE NO.:                      | SC175106               |                                               |                 |                 |                    |           |             |             |             |
| SUBMERGENCE:                   | NA                     |                                               |                 |                 |                    |           |             |             |             |
| SPRAY:                         | NA                     |                                               |                 |                 |                    |           |             |             |             |
| EQUIPMENT NOT SUBJECT TO       |                        |                                               |                 |                 |                    |           |             |             |             |
| SUBMERGENCE OR SPRAY           |                        |                                               |                 |                 |                    |           |             |             |             |
| DOCUMENTATION ACCEPTABILITY:   |                        |                                               |                 |                 |                    |           |             |             |             |
| ACCEPTABLE TO NUREG 0588,CAT I |                        |                                               |                 |                 |                    |           |             |             |             |
| MAINT/SURVEILL - - -           |                        |                                               |                 |                 |                    |           |             |             |             |
| REFERENCE: 2                   |                        |                                               |                 |                 |                    |           |             |             |             |
| QUALIFIED LIFE - - -           |                        |                                               |                 |                 |                    |           |             |             |             |
| (YEARS): 16.8 [R2]             |                        |                                               |                 |                 |                    |           |             |             |             |
| REFERENCE: 2                   |                        |                                               |                 |                 |                    |           |             |             |             |
|                                |                        | [R2] INDICATES CHANGES MADE IN THIS REVISION. |                 |                 |                    |           |             |             |             |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5005A
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-6-C5
- CALCULATION NO. 12177-EQS-059 [R2]

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN, BY ANALYSIS.  
4.PER APPENDIX B OF REFERENCE 1.



QUAL REF #\_C051MAD\_ REV 2

19-Mar-86

| EQUIPMENT DESCRIPTION                         |                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |             |
|-----------------------------------------------|------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|-------------|
|                                               |                        | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS     |
|                                               |                        |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |             |
| EQUIP NO.:                                    | 2ICS*ADV130            | OP.TIME:                                   | 12 HRS          | >100 DAYS       | 3                  | 4         | AN+DATA     | YES         | NOTE 3      |
| SPEC NO.:                                     | C051M                  | TEMP (F):                                  |                 |                 |                    |           |             |             | NOTE 1      |
| SYSTEM:                                       | REACTOR CORE ISOLATION | NORMAL                                     | 120/85          | 140             | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2      |
|                                               |                        | ABNORMAL                                   | 86              | 268             | 1                  | 2,4       | TEST-SIM    | NA          |             |
| TYPE: (DESCRIPTION)                           | SOLENOID VALVE         | ACCIDENT                                   | 175 [R2]        | 346             | 1                  | 2,4       | TEST-SIM    | YES         | NOTE 4 [R2] |
|                                               |                        | PRESS (PSIG)                               |                 |                 |                    |           |             |             | NOTE 1      |
|                                               |                        | NORMAL                                     | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |             |
|                                               |                        | ABNORMAL                                   | NA              | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |             |
| MANUFACTURER:                                 | ASCO                   | ACCIDENT                                   | 1.5 [R2]        | 110             | 1                  | 2         | TEST-SIM    | YES         | NOTE 4 [R2] |
|                                               |                        | RH (%):                                    |                 |                 |                    |           |             |             | NOTE 1      |
| MODEL NO.:                                    | 206-381-3RF            | NORMAL                                     | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |             |
|                                               |                        | ABNORMAL                                   | NA              | 100             | 1                  | 2         | TEST-SIM    | NA          |             |
| SAFETY FUNCTION:                              | - - -                  | ACCIDENT                                   | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |             |
| TURBINE EXH. DR. ISOLATION VALVE              |                        | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1      |
|                                               |                        | NORM GAMMA                                 | 2.4E4           |                 | 1                  | 2         |             | NA          |             |
|                                               |                        | ACC GAMMA                                  | 1.2E6           | 2.0E8           | 1                  | 2         | TEST-SIM    | YES         | NOTE 4      |
| OP. CODE:                                     | A                      | NORM BETA                                  | NA              |                 | 1                  | 2         |             | NA          |             |
|                                               |                        | ACC BETA                                   | 6.2E4           |                 | 1                  | 2         |             | YES         | NOTE 4      |
|                                               |                        | NEUTRON                                    | NA              |                 | 1                  | 2         |             | NA          |             |
|                                               |                        | SPRAY                                      | NA              | NA              | NA                 | NA        | NA          | NA          |             |
| ACCURACY - -                                  |                        | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |             |
| SPEC:                                         | NA                     |                                            |                 |                 |                    |           |             |             |             |
| DEMO:                                         | NA                     |                                            |                 |                 |                    |           |             |             |             |
| ZONE NO.:                                     | SC175106               |                                            |                 |                 |                    |           |             |             |             |
| SUBMERGENCE:                                  | NA                     |                                            |                 |                 |                    |           |             |             |             |
| SPRAY:                                        | NA                     |                                            |                 |                 |                    |           |             |             |             |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY |                        |                                            |                 |                 |                    |           |             |             |             |
| DOCUMENTATION ACCEPTABILITY:                  |                        |                                            |                 |                 |                    |           |             |             |             |
| ACCEPTABLE TO NUREG 0588,CAT I                |                        |                                            |                 |                 |                    |           |             |             |             |
| MAINT/SURVEILL - - -                          |                        |                                            |                 |                 |                    |           |             |             |             |
| REFERENCE: 4,5                                |                        |                                            |                 |                 |                    |           |             |             |             |
| QUALIFIED LIFE - - -                          |                        |                                            |                 |                 |                    |           |             |             |             |
| (YEARS): 3.2 [R2]                             |                        |                                            |                 |                 |                    |           |             |             |             |
| REFERENCE: 2,4                                |                        |                                            |                 |                 |                    |           |             |             |             |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                        |                                            |                 |                 |                    |           |             |             |             |

- DOCUMENT REFERENCE:
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
  2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5004D
  3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-6-C5
  4. CALCULATION NO. 12177-EQS-16
  5. ASCO INSTALLATION AND MAINTENANCE INSTRUCTION FORM V-5969 AND V-5999
- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 32 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN, BY ANALYSIS.  
4.PER APPENDIX B OF REV 1.



19-Mar-86

QUAL REF #\_C051MAE\_ REV 2

| EQUIPMENT DESCRIPTION                                          |                           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |             |
|----------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------|
|                                                                |                           | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS     |
|                                                                |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |             |
| EQUIP NO.:                                                     | 21CS*ADV131               | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 12 HRS             | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 3      |
| SPEC NO.:                                                      | C051M                     | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                    |                    |           |                |                | NOTE 1      |
| SYSTEM:                                                        | REACTOR CORE<br>ISOLATION | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 120/85             | 194                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2      |
|                                                                |                           | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 86                 | 194                | 1                  | 2         | TEST-SIM       | NA             |             |
| TYPE: (DESCRIPTION)                                            |                           | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 175 [R2]           | 380                | 1                  | 2         | TEST-SIM       | YES            | NOTE 4 [R2] |
| LIMIT SWITCH                                                   |                           | PRESS(PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                    |                    |           |                |                | NOTE 1      |
|                                                                |                           | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                                |                           | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NA                 | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |             |
| MANUFACTURER:                                                  | NAMCO                     | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1.5 [R2]           | 100                | 1                  | 2         | TEST-SIM       | YES            | NOTE 4 [R2] |
|                                                                |                           | IRH (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                | NOTE 1      |
| MODEL NO.:                                                     | EA740                     | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                                |                           | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA             |             |
| SAFETY FUNCTION:                                               | - - -                     | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |             |
| INDICATE POSITION OF ST LINE                                   |                           | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                | NOTE 1      |
| DR. ISOLATION VALVE                                            |                           | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2.4E4              |                    | 1                  |           |                | NA             |             |
|                                                                |                           | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1.2E6              | 2.04E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 4      |
| OP. CODE:                                                      | A                         | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NA                 |                    | 1                  |           |                | NA             |             |
|                                                                |                           | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 6.2E6              |                    | 1                  |           |                | YES            | NOTE 4      |
|                                                                |                           | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NA                 |                    | 1                  |           |                | NA             |             |
|                                                                |                           | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NA                 | NA                 | NA                 | NA        | NA             | NA             |             |
| ACCURACY - -                                                   |                           | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |             |
| SPEC:                                                          | NA                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |                    |           |                |                |             |
| DEMO:                                                          | NA                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |                    |           |                |                |             |
| ZONE NO.:                                                      | SC175106                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |                    |           |                |                |             |
| SUBMERGENCE:                                                   | NA                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |                    |           |                |                |             |
| SPRAY:                                                         | NA                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |                    |           |                |                |             |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY               |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |                    |           |                |                |             |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |                    |           |                |                |             |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |                    |           |                |                |             |
| QUALIFIED LIFE - - -<br>(YEARS): 16.8 [R2]<br>REFERENCE: 2     |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |                    |           |                |                |             |
|                                                                |                           | <p>DOCUMENT REFERENCE:</p> <p>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]</p> <p>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5005A</p> <p>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-6-CS</p> <p>4. CALCULATION NO. 12177-EQS-059 [R2]</p> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.</p> <p>3.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN, BY ANALYSIS.</p> <p>4.PER APPENDIX B OF REFERENCE 1.</p> |                    |                    |                    |           |                |                |             |
|                                                                |                           | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                    |                    |           |                |                |             |



QUAL REF #\_C051MAE\_ REV 2

19-Mar-86

| EQUIPMENT DESCRIPTION                            |                           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION    |                    |                    |                    |           |                |                |             |
|--------------------------------------------------|---------------------------|-----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------|
|                                                  |                           | PARAMETER                                     | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS     |
|                                                  |                           |                                               |                    |                    | SPECIFIED          | QUALIFIED |                |                |             |
| EQUIP NO.:                                       | 2ICS*AOV131               | OP.TIME:                                      | 12 HRS             | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 3      |
| SPEC NO.:                                        | C051M                     | TEMP (F):                                     |                    |                    |                    |           |                |                | NOTE 1      |
| SYSTEM:                                          | REACTOR CORE<br>ISOLATION | NORMAL                                        | 120/85             | 140                | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2      |
|                                                  |                           | ABNORMAL                                      | 86                 | 268                | 1                  | 2,4       | TEST-SIM       | NA             |             |
| TYPE: (DESCRIPTION)                              |                           | ACCIDENT                                      | 175 [R2]           | 346                | 1                  | 2,4       | TEST-SIM       | YES            | NOTE 4 [R2] |
| SOLENOID VALVE                                   |                           | PRESS (PSIG)                                  |                    |                    |                    |           |                |                | NOTE 1      |
|                                                  |                           | NORMAL                                        | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                  |                           | ABNORMAL                                      | NA                 | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |             |
| MANUFACTURER:                                    | ASCO                      | ACCIDENT                                      | 1.5 [R2]           | 110                | 1                  | 2         | TEST-SIM       | YES            | NOTE 4 [R2] |
|                                                  |                           | RH (%):                                       |                    |                    |                    |           |                |                | NOTE 1      |
| MODEL NO.:                                       | 206-381-3RF               | NORMAL                                        | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                  | (125 VDC)                 | ABNORMAL                                      | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA             |             |
| SAFETY FUNCTION:                                 | - - -                     | ACCIDENT                                      | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |             |
| TURBINE EXH. DR. ISOLATION<br>VALVE              |                           | RADIATION:                                    |                    |                    |                    |           |                |                | NOTE 1      |
|                                                  |                           | NORM GAMMA                                    | 2.4E4              |                    | 1                  |           |                | NA             |             |
|                                                  |                           | ACC GAMMA                                     | 1.2E6              | 2.0E8              | 1                  | 2         | TEST-SIM       | YES            | NOTE 4      |
| OP. CODE:                                        | A                         | NORM BETA                                     | NA                 |                    | 1                  |           |                | NA             |             |
|                                                  |                           | ACC BETA                                      | 6.2E4              |                    | 1                  |           |                | YES            | NOTE 4      |
|                                                  |                           | NEUTRON                                       | NA                 |                    | 1                  |           |                | NA             |             |
|                                                  |                           | SPRAY                                         | NA                 | NA                 | NA                 | NA        | NA             | NA             |             |
| ACCURACY - -                                     |                           | SUBMERGENCE                                   | NA                 | NA                 | NA                 | NA        | NA             | NA             |             |
| SPEC:                                            | NA                        |                                               |                    |                    |                    |           |                |                |             |
| DEMO:                                            | NA                        |                                               |                    |                    |                    |           |                |                |             |
| ZONE NO.:                                        | SC175106                  |                                               |                    |                    |                    |           |                |                |             |
| SUBMERGENCE:                                     | NA                        |                                               |                    |                    |                    |           |                |                |             |
| SPRAY:                                           | NA                        |                                               |                    |                    |                    |           |                |                |             |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY |                           |                                               |                    |                    |                    |           |                |                |             |
| DOCUMENTATION ACCEPTABILITY:                     |                           |                                               |                    |                    |                    |           |                |                |             |
| ACCEPTABLE TO NUREG 0588,CAT I                   |                           |                                               |                    |                    |                    |           |                |                |             |
| MAINT/SURVEILL - - -                             |                           |                                               |                    |                    |                    |           |                |                |             |
| REFERENCE: 4,5                                   |                           |                                               |                    |                    |                    |           |                |                |             |
| QUALIFIED LIFE - - -                             |                           |                                               |                    |                    |                    |           |                |                |             |
| (YEARS): 3.2 [R2]                                |                           |                                               |                    |                    |                    |           |                |                |             |
| REFERENCE: 2,4                                   |                           |                                               |                    |                    |                    |           |                |                |             |
|                                                  |                           | [R2] INDICATES CHANGES MADE IN THIS REVISION. |                    |                    |                    |           |                |                |             |

- DOCUMENT REFERENCE:
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
  2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5004D
  3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-6-C5
  4. CALCULATION NO. 12177-EQS-16
  5. ASCO INSTALLATION AND MAINTENANCE INSTRUCTION FORM V-6001
- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 32 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN, BY ANALYSIS.  
4.PER APPENDIX B OF REV 1.





QUAL REF #\_C051MAF\_ REV 2

19-Mar-86

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |             |
|--------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------|
|                                | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS     |
|                                |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |             |
| EQUIP NO.: 2ICS*FV108          | OP.TIME:                                   | 12 HOURS           | >100DAY[R2]        | 3                  | 2,4       | TEST-SIM       | YES            | NOTE 4      |
| SPEC NO.: C051M                | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1      |
| SYSTEM: REACTOR CORE ISOLATION | NORMAL                                     | 120/85             | 122                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2      |
|                                | ABNORMAL                                   | 86                 | 122                | 1                  | 2         | TEST-SIM       | NA             |             |
|                                | ACCIDENT                                   | 175 [R2]           | 340                | 1                  | 2         | TEST-SIM       | YES            | NOTE 4 [R2] |
| TYPE: (DESCRIPTION)            | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1      |
| MOTOR OPERATED VALVE,          | NORMAL                                     | -0.25"WG           | 0                  | 1                  | 2         | TEST-SIM       | NA             |             |
| H.K.PORTER DC MOTOR, CLASS H   | ABNORMAL                                   | NA                 | 0                  | 1                  | 2         | TEST-SIM       | NA             |             |
| INSULATION                     | ACCIDENT                                   | 1.5 [R2]           | 105                | 1                  | 2         | TEST-SIM       | YES            | NOTE 4 [R2] |
| MANUFACTURER: LIMITORQUE       | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1      |
| MODEL NO.: SMB-00-5            | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |             |
|                                | ABNORMAL                                   | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA             |             |
| SAFETY FUNCTION: - - -         | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |             |
| TEST BYPASS TO CONDENSATE      | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1      |
| STORAGE TANK FLOW CONTROL      | NORM GAMMA                                 | 2.4E4              |                    | 1                  |           | TEST-SIM       | NA             |             |
| VALVE                          | ACC GAMMA                                  | 1.2E6              | 1.66E8             | 1                  | 5         | TEST-SIM       | YES            | NOTE 5      |
| OP. CODE: A                    | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |             |
|                                | ACC BETA                                   | 6.2E4              |                    | 1                  |           |                | YES            |             |
|                                | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |             |
|                                | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |             |
| ACCURACY - -                   | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |             |
| SPEC: NA                       |                                            |                    |                    |                    |           |                |                |             |
| DEMO: NA                       |                                            |                    |                    |                    |           |                |                |             |
| ZONE NO.: SC175106             |                                            |                    |                    |                    |           |                |                |             |
| SUBMERGENCE: NA                |                                            |                    |                    |                    |           |                |                |             |
| SPRAY: NA                      |                                            |                    |                    |                    |           |                |                |             |
| EQUIPMENT NOT SUBJECT TO       |                                            |                    |                    |                    |           |                |                |             |
| SUBMERGENCE OR SPRAY           |                                            |                    |                    |                    |           |                |                |             |
| DOCUMENTATION ACCEPTABILITY:   |                                            |                    |                    |                    |           |                |                |             |
| ACCEPTABLE TO NUREG 0588,CAT I |                                            |                    |                    |                    |           |                |                |             |
| MAINT/SURVEILL - - -           |                                            |                    |                    |                    |           |                |                |             |
| REFERENCE: 2                   |                                            |                    |                    |                    |           |                |                |             |
| QUALIFIED LIFE - - - 11.5      |                                            |                    |                    |                    |           |                |                |             |
| (YEARS): (SEE NOTE 3)[R2]      |                                            |                    |                    |                    |           |                |                |             |
| REFERENCE: 4                   |                                            |                    |                    |                    |           |                |                |             |

[R2] INDICATES CHANGES MADE IN THIS REVISION.

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
- 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
- 3.QUALIFIED LIFE IS BASED ON ZONE SPECIFIC ENVIRONMENTAL VALUES, WHICH INCORPORATE MAXIMUM, MINIMUM AND AVERAGE CONDITIONS. EXTENSION OF THE QUALIFIED LIFE WILL BE INCREASED PENDING COMPLETION OF THE GE LIMITORQUE TESTING PROGRAM.
- 4.OPERABILITY PERIOD EXTENDED FROM 30 DAYS TESTED VALUE TO 100 DAYS BY ANALYSIS. SEE REFERENCE 4.
- 5.RADIATION QUALIFICATION EXTENDED FROM 20 MEGARADS IN REF. 2 TO 166 MEGARADS BY REF. 5 (GE PHASE 3 TEST REPORT), WHICH HAS SUCCESSFULLY COMPLETED TESTING UP TO 30 DAYS OF POST-LOCA TESTING.



QUAL REF #\_C051MAG\_ REV 2

19-Mar-86

| EQUIPMENT DESCRIPTION                         |                           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |             |
|-----------------------------------------------|---------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------|
|                                               |                           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS     |
|                                               |                           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |             |
| EQUIP NO.:                                    | 2ICS*PCV115               | OP.TIME:                                   | 12 HRS             | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 3      |
| SPEC NO.:                                     | C051M                     | TEMP (F):                                  |                    |                    |                    |           |                |                |             |
| SYSTEM:                                       | REACTOR CORE<br>ISOLATION | NORMAL                                     | 120/85             | 194                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2      |
|                                               |                           | ABNORMAL                                   | 86                 | 194                | 1                  | 2         | TEST-SIM       | NA             |             |
| TYPE: (DESCRIPTION)                           |                           | ACCIDENT                                   | 175 [R2]           | 380                | 1                  | 2         | TEST-SIM       | YES            | NOTE 4 [R2] |
| LIMIT SWITCH                                  |                           | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1      |
|                                               |                           | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |             |
|                                               |                           | ABNORMAL                                   | NA                 | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |             |
| MANUFACTURER:                                 | NAMCO                     | ACCIDENT                                   | 1.5 [R2]           | 100                | 1                  | 2         | TEST-SIM       | YES            | NOTE 4 [R2] |
|                                               |                           | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1      |
| MODEL NO.:                                    | EA740                     | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |             |
|                                               |                           | ABNORMAL                                   | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA             |             |
| SAFETY FUNCTION:                              | - - -                     | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |             |
| INDICATE POSITION OF TURBINE                  |                           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1      |
| LUBE OIL PRESSURE VALVE                       |                           | NORM GAMMA                                 | 2.4E4              |                    | 1                  |           |                | NA             |             |
|                                               |                           | ACC GAMMA                                  | 1.2E6              | 2.04E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 4      |
| OP. CODE:                                     | A                         | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |             |
|                                               |                           | ACC BETA                                   | 6.2E4              |                    | 1                  |           |                | YES            | NOTE 4      |
|                                               |                           | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |             |
|                                               |                           | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |             |
| ACCURACY - -                                  |                           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |             |
| SPEC:                                         | NA                        |                                            |                    |                    |                    |           |                |                |             |
| DEMO:                                         | NA                        |                                            |                    |                    |                    |           |                |                |             |
| ZONE NO.:                                     | SC175106                  |                                            |                    |                    |                    |           |                |                |             |
| SUBMERGENCE:                                  | NA                        |                                            |                    |                    |                    |           |                |                |             |
| SPRAY:                                        | NA                        |                                            |                    |                    |                    |           |                |                |             |
| EQUIPMENT NOT SUBJECT TO                      |                           |                                            |                    |                    |                    |           |                |                |             |
| SUBMERGENCE OR SPRAY                          |                           |                                            |                    |                    |                    |           |                |                |             |
| DOCUMENTATION ACCEPTABILITY:                  |                           |                                            |                    |                    |                    |           |                |                |             |
| ACCEPTABLE TO NUREG 0588,CAT I                |                           |                                            |                    |                    |                    |           |                |                |             |
| MAINT/SURVEILL - - -                          |                           |                                            |                    |                    |                    |           |                |                |             |
| REFERENCE: 2                                  |                           |                                            |                    |                    |                    |           |                |                |             |
| QUALIFIED LIFE - - -                          |                           |                                            |                    |                    |                    |           |                |                |             |
| (YEARS): 16.8 [R2]                            |                           |                                            |                    |                    |                    |           |                |                |             |
| REFERENCE: 2                                  |                           |                                            |                    |                    |                    |           |                |                |             |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                           |                                            |                    |                    |                    |           |                |                |             |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN, BY ANALYSIS. (REF. 4)  
4.PER APPENDIX B OF REFERENCE 1.

DOCUMENT REFERENCE:  
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]  
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5005A  
3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-6-C4  
4. CALCULATION NO. 12177-EQS-059 [R2]



| EQUIPMENT DESCRIPTION                                          |                           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |             |
|----------------------------------------------------------------|---------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------|
|                                                                |                           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS     |
|                                                                |                           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |             |
| EQUIP NO.:                                                     | 2ICS*PCV115               | OP.TIME:                                   | 12 HRS             | 30 DAYS            | 3                  | 2         | AN+DATA        | YES            |             |
| SPEC NO.:                                                      | C051M                     | TEMP (F):                                  |                    |                    |                    |           |                |                |             |
| SYSTEM:                                                        | REACTOR CORE<br>ISOLATION | NORMAL                                     | 120/85             | 125                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1      |
|                                                                |                           | ABNORMAL                                   | 86                 | 203                | 1                  |           | TEST-SIM       | NA             | NOTE 2      |
| TYPE: (DESCRIPTION)                                            |                           | ACCIDENT                                   | 175 [R2]           | 345                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3 [R2] |
| ELECTROHYDRAULIC ACTUATOR                                      |                           | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1      |
|                                                                |                           | NORMAL                                     | -0.25"WG           | 0                  | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                                |                           | ABNORMAL                                   | NA                 | -                  | 1                  |           | TEST-SIM       | NA             |             |
| MANUFACTURER: BORG-WARNER                                      |                           | ACCIDENT                                   | 1.5 [R2]           | 32                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3 [R2] |
|                                                                |                           | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1      |
| MODEL NO.:                                                     | 85960                     | NORMAL                                     | 50                 | 55                 | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                                |                           | ABNORMAL                                   | NA                 | 90                 | 1                  | 2         | TEST-SIM       | NA             |             |
| SAFETY FUNCTION: - - -                                         |                           | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |             |
| TURBINE LUBE OIL PRESSURE<br>VALVE                             |                           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1      |
|                                                                |                           | NORM GAMMA                                 | 2.4E4              |                    | 1                  |           |                | NA             |             |
|                                                                |                           | ACC GAMMA                                  | 1.2E6              | 5.5E7              | 1                  | 2         | TEST-SIM       | YES            | NOTE 3 [R2] |
| OP.. CODE: A                                                   |                           | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |             |
|                                                                |                           | ACC BETA                                   | 6.2E4              |                    | 1                  |           |                | NA             | NOTE 3 [R2] |
|                                                                |                           | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |             |
|                                                                |                           | SPRAY                                      | NA                 |                    | NA                 | NA        | NA             | NA             |             |
| ACCURACY - -                                                   |                           | SUBMERGENCE                                | NA                 |                    | NA                 | NA        | NA             | NA             |             |
| SPEC: NA                                                       |                           |                                            |                    |                    |                    |           |                |                |             |
| DEMO: NA                                                       |                           |                                            |                    |                    |                    |           |                |                |             |
| ZONE NO.:                                                      | SC175106                  |                                            |                    |                    |                    |           |                |                |             |
| SUBMERGENCE:                                                   | NA                        |                                            |                    |                    |                    |           |                |                |             |
| SPRAY:                                                         | NA                        |                                            |                    |                    |                    |           |                |                |             |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY               |                           |                                            |                    |                    |                    |           |                |                |             |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT 1 |                           |                                            |                    |                    |                    |           |                |                |             |
|                                                                |                           |                                            |                    |                    |                    |           |                |                |             |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |                           |                                            |                    |                    |                    |           |                |                |             |
| QUALIFIED LIFE - - -<br>(YEARS): 10<br>REFERENCE: 2            |                           |                                            |                    |                    |                    |           |                |                |             |
|                                                                |                           |                                            |                    |                    |                    |           |                |                |             |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5001B
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-6-C4

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.PER APPENDIX B OF REFERENCE 1. [R2]

[R2] INDICATES CHANGES MADE IN THIS REVISION.



QUAL REF # C051MAH REV 2

23-Mar-86

[illegible]





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       |                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION DATA SHEET |                 |                 |                    |           |             |             |         |
|-------------------------------------------------------------|-----------------------|-------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                             |                       | PARAMETER                                             | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                             |                       |                                                       |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                                  | 2RHS*FV38B            | OP.TIME:                                              | 100 DAYS        | >100DAY[R2]     | 3                  | 2,4       | TEST-SIM    |             | NOTE 4  |
| SPEC NO.:                                                   | C051M                 | TEMP (F):                                             | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| SYSTEM:                                                     | RESIDUAL HEAT REMOVAL | NORMAL                                                | 104/93          | 122             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                                             |                       | ABNORMAL                                              | 106             | 122             |                    | 2         | TEST-SIM    | NA          |         |
|                                                             |                       | ACCIDENT                                              | 200             | 340 [R2]        | 1                  | 5 [R2]    | TEST-SIM    | YES         |         |
| TYPE: (DESCRIPTION)                                         |                       | PRESS(PSIG)                                           | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| MOTOR OPERATED VALVE,                                       |                       | NORMAL                                                | -0.25"WG        | 0               | 1                  | 2         | TEST-SIM    | NA          |         |
| RELIANCE AC MOTOR, CLASS RH                                 |                       | ABNORMAL                                              | NA              | 0               |                    | 2         | TEST-SIM    | NA          |         |
| INSULATION                                                  |                       | ACCIDENT                                              | 2.8             | 25              | 1                  | 2,5       | TEST-SIM    | YES         |         |
| MANUFACTURER: LIMITORQUE                                    |                       | RH (%) :                                              | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| MODEL NO.:                                                  | SMB-00-5              | NORMAL                                                | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                             |                       | ABNORMAL                                              | NA              | 100             |                    | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -                                      |                       | ACCIDENT                                              | 100             | STEAM [R2]      | 1                  | 2,5       | TEST-SIM    | NA          |         |
| SUPPRESSION POOL RETURN LINE                                |                       | RADIATION:                                            | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| ISOLATION VALVES                                            |                       | NORM GAMMA                                            | 2E6             |                 | 1                  | .         | TEST-SIM    | NA          |         |
|                                                             |                       | ACC GAMMA                                             | 5.8E7           | 1.66E8          | 1                  | 5         | TEST-SIM    | YES         | NOTE 5  |
| OP. CODE: A                                                 |                       | NORM BETA                                             | NA              |                 |                    |           |             | NA          |         |
|                                                             |                       | ACC BETA                                              | 6.1E6           |                 | 1                  |           | AN+DATA     | YES         |         |
|                                                             |                       | NEUTRON                                               | NA              |                 |                    |           |             | NA          |         |
|                                                             |                       | SPRAY                                                 | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ACCURACY - -                                                |                       | SUBMERGENCE                                           | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: NA                                                    |                       |                                                       |                 |                 |                    |           |             |             |         |
| DEMO: NA                                                    |                       |                                                       |                 |                 |                    |           |             |             |         |
| ZONE NO.:                                                   | SC215122              |                                                       |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                                | NA                    |                                                       |                 |                 |                    |           |             |             |         |
| SPRAY:                                                      | NA                    |                                                       |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY               |                       |                                                       |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                       |                                                       |                 |                 |                    |           |             |             |         |
|                                                             |                       |                                                       |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                                        |                       |                                                       |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                                |                       |                                                       |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                                        |                       |                                                       |                 |                 |                    |           |             |             |         |
| (YEARS): 20 (SEE NOTE 3)                                    |                       |                                                       |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                                              |                       |                                                       |                 |                 |                    |           |             |             |         |
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## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                 |          |
|--------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|----------|
|                                | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN:<br>DEMO | REMARKS  |
|                                |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                 |          |
| EQUIP NO.: 2RHS*FV38C          | OP.TIME:                                   | 6 HRS [R2]         | >100DAY[R2]        | 3                  | 2,4       | TEST-SIM       | YES[R2]         | - NOTE 4 |
| SPEC NO.: C051M                | TEMP (F):                                  |                    |                    |                    |           |                |                 | - NOTE 1 |
| SYSTEM:                        | NORMAL                                     | 104/93             | 122                | 1                  | 2         | TEST-SIM       | NA              | - NOTE 2 |
| RESIDUAL HEAT REMOVAL          | ABNORMAL                                   | 106                | 122                |                    | 2         | TEST-SIM       | NA              |          |
|                                | ACCIDENT                                   | 200                | 340 [R2]           | 1                  | 5 [R2]    | TEST-SIM       | YES             |          |
| TYPE: (DESCRIPTION)            | PRESS (PSIG)                               |                    |                    |                    |           |                |                 | - NOTE 1 |
| MOTOR OPERATED VALVE,          | NORMAL                                     | -0.25"WG           | 0                  | 1                  | 2         | TEST-SIM       | NA              |          |
| RELIANCE AC MOTOR, CLASS RH    | ABNORMAL                                   | NA                 | 0                  | 1                  | 2         | TEST-SIM       | NA              |          |
| INSULATION                     | ACCIDENT                                   | 2.8                | 25                 | 1                  | 2         | TEST-SIM       | YES             |          |
| MANUFACTURER: LIMITORQUE       | RH (%)                                     |                    |                    |                    |           |                |                 | - NOTE 1 |
|                                | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA              |          |
| MODEL NO.: SMB-00-5            | ABNORMAL                                   | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA              |          |
|                                | ACCIDENT                                   | 100                | STEAM [R2]         | 1                  | 2,5       | TEST-SIM       | NA              |          |
| SAFETY FUNCTION: - - -         | RADIATION:                                 |                    |                    |                    |           |                |                 | - NOTE 1 |
| SUPPRESSION POOL RETURN LINE   | NORM GAMMA                                 | 2E6                |                    | 1                  |           | TEST-SIM       | NA              |          |
| ISOLATION VALVES               | ACC GAMMA                                  | 1.7E6 [R2]         | 1.66E8             | 1                  | 5         | TEST-SIM       | YES             | - NOTE 5 |
|                                | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA              |          |
| OP. CODE: A                    | ACC BETA                                   | 7.3E3 [R2]         |                    | 1                  |           | AN+DATA        | YES             |          |
|                                | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA              |          |
|                                | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA              |          |
| ACCURACY - -                   | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA              |          |
| SPEC: NA                       |                                            |                    |                    |                    |           |                |                 |          |
| DEMO: NA                       |                                            |                    |                    |                    |           |                |                 |          |
| ZONE NO.: SC215122             |                                            |                    |                    |                    |           |                |                 |          |
| SUBMERGENCE: NA                |                                            |                    |                    |                    |           |                |                 |          |
| SPRAY: NA                      |                                            |                    |                    |                    |           |                |                 |          |
| EQUIPMENT NOT SUBJECT TO       |                                            |                    |                    |                    |           |                |                 |          |
| SUBMERGENCE OR SPRAY           |                                            |                    |                    |                    |           |                |                 |          |
| DOCUMENTATION ACCEPTABILITY:   |                                            |                    |                    |                    |           |                |                 |          |
| ACCEPTABLE TO NUREG 0588,CAT I |                                            |                    |                    |                    |           |                |                 |          |
|                                |                                            |                    |                    |                    |           |                |                 |          |
| MAINT/SURVEILL - - -           |                                            |                    |                    |                    |           |                |                 |          |
| REFERENCE: 2                   |                                            |                    |                    |                    |           |                |                 |          |
| QUALIFIED LIFE - - -           |                                            |                    |                    |                    |           |                |                 |          |
| (YEARS): 20 (SEE NOTE 3)       |                                            |                    |                    |                    |           |                |                 |          |
| REFERENCE: 2,4                 |                                            |                    |                    |                    |           |                |                 |          |

[R2] INDICATES CHANGES MADE IN THIS REVISION.

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX  
DESIGN/AVERAGE.  
3.QUALIFIED LIFE IS BASED ON ZONE SPE-  
CIFIC ENVIRONMENTAL VALUES, WHICH  
INCORPORATE MAXIMUM, MINIMUM AND  
AVERAGE CONDITIONS.  
4.OPERABILITY PERIOD EXTENDED FROM  
. 30 DAYS TESTED VALUE TO 100 DAYS BY  
ANALYSIS.  
5.RADIATION QUALIFICATION WAS EXTENDED  
FROM 20 MEGARADS IN REF. 2 TO 166  
MEGARADS IN REF. 5 (GE PHASE 3 TEST  
REPORT), WHICH HAS SUCCESSFULLY  
COMPLETED TESTING UP TO 30 DAYS OF  
POST-LOCA TESTING.



19-Mar-86

QUAL REF #\_C051MAK\_REV 2

| EQUIPMENT DESCRIPTION                                                                |                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION    |                    |                    |                    |           |                |                |         |
|--------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                                      |                          | PARAMETER                                     | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                                      |                          |                                               |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                                           | 2RHS*LV17A               | OP.TIME:                                      | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                                                            | C051M                    | TEMP (F):                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                                                              | RESIDUAL HEAT<br>REMOVAL | NORMAL                                        | 120/87 [R2]        | 194                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                                                                      |                          | ABNORMAL                                      | 104                | 194                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                                                  | LIMIT SWITCH             | ACCIDENT                                      | 175                | 380                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                                      |                          | PRESS (PSIG)                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                                      |                          | NORMAL                                        | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                      |                          | ABNORMAL                                      | NA                 | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                                                        | NAMCO                    | ACCIDENT                                      | 2.8                | 100                | 1                  | 2         | TEST-SIM       | YES            |         |
| MODEL NO.:                                                                           | EA740                    | RH (%):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                                      |                          | NORMAL                                        | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                      |                          | ABNORMAL                                      | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                                                     | - - -                    | ACCIDENT                                      | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| INDICATING THE POSITION OF<br>THE ISOLATION VALVES FOR<br>STM CONDENSING MODE OF RHS |                          | RADIATION:                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| OP. CODE:                                                                            | A                        | NORM GAMMA                                    | 1.1E6              |                    | 1                  |           |                | NA             |         |
|                                                                                      |                          | ACC GAMMA                                     | 1.6E6 [R2]         | 2.04E8             | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                                      |                          | NORM BETA                                     | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                                      |                          | ACC BETA                                      | 7.3E3              |                    | 1                  |           |                | YES            |         |
|                                                                                      |                          | NEUTRON                                       | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                                      |                          | SPRAY                                         | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                                                                         |                          | SUBMERGENCE                                   | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                                                                                | NA                       |                                               |                    |                    |                    |           |                |                |         |
| DEMO:                                                                                | NA                       |                                               |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                                            | ABN17505                 |                                               |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                                         | NA                       |                                               |                    |                    |                    |           |                |                |         |
| SPRAY:                                                                               | NA                       |                                               |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY                                     |                          |                                               |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588, CAT 1                      |                          |                                               |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                                                 |                          |                                               |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 16.8 [R2]<br>REFERENCE: 2                           |                          |                                               |                    |                    |                    |           |                |                |         |
|                                                                                      |                          | [R2] INDICATES CHANGES MADE IN THIS REVISION. |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5005A
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-7-2
- CALCULATION NO. 12177-EQS-059 [R2]

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN, BY ANALYSIS.



QUAL REF #\_C051MAK\_REV 2

19-Mar-86

| EQUIPMENT DESCRIPTION          |                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION    |                 |                 |                    |           |             |             |         |
|--------------------------------|-----------------------|-----------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |                       | PARAMETER                                     | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |                       |                                               |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                     | 2RHS*LV17A            | OP.TIME:                                      | 6 HRS           | >100 DAYS       | 3                  | 4         | AN+DATA     | YES         | NOTE 3  |
| SPEC NO.:                      | C051M                 | TEMP (F):                                     |                 |                 |                    |           |             |             |         |
| SYSTEM:                        | RESIDUAL HEAT REMOVAL | NORMAL                                        | 120/87          | 140             | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2  |
|                                |                       | ABNORMAL                                      | 104             | 268             | 1                  | 2,4       | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)            |                       | ACCIDENT                                      | 175             | 346             | 1                  | 2,4       | TEST-SIM    | YES         |         |
| SOLENOID VALVE                 |                       | PRESS (PSIG)                                  |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                       | NORMAL                                        | -0.25" WG       | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |                       | ABNORMAL                                      | NA              | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                  | ASCO                  | ACCIDENT                                      | 2.8             | 110             | 1                  | 2         | TEST-SIM    | YES         |         |
| MODEL NO.:                     | 206-380-3RF           | RH (%):                                       |                 |                 |                    |           |             |             | NOTE 1  |
|                                | (120V 60HZ)           | NORMAL                                        | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:               |                       | ABNORMAL                                      | NA              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| ISOLATION VALVE FOR            |                       | ACCIDENT                                      | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |         |
| STM CONDENSING MODE OF RHS     |                       | RADIATION:                                    |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                       | NORM GAMMA                                    | 1.1E6           |                 | 1                  | 2         |             | NA          |         |
|                                |                       | ACC GAMMA                                     | 1.6E6 [R2]      | 2.0E8           | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                      | A                     | NORM BETA                                     | NA              |                 | 1                  | 2         |             | NA          |         |
|                                |                       | ACC BETA                                      | 7.3E3           |                 | 1                  | 2         |             | YES         |         |
|                                |                       | NEUTRON                                       | NA              |                 | 1                  | 2         |             | NA          |         |
|                                |                       | SPRAY                                         | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ACCURACY - -                   |                       | SUBMERGENCE                                   | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                          | NA                    |                                               |                 |                 |                    |           |             |             |         |
| DEMO:                          | NA                    |                                               |                 |                 |                    |           |             |             |         |
| ZONE NO.:                      | ABN17505              |                                               |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                   | NA                    |                                               |                 |                 |                    |           |             |             |         |
| SPRAY:                         | NA                    |                                               |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |                       |                                               |                 |                 |                    |           |             |             |         |
| SUBMERGENCE OR SPRAY           |                       |                                               |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                       |                                               |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                       |                                               |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |                       |                                               |                 |                 |                    |           |             |             |         |
| REFERENCE: 4,5                 |                       |                                               |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |                       |                                               |                 |                 |                    |           |             |             |         |
| (YEARS): 40                    |                       |                                               |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                 |                       |                                               |                 |                 |                    |           |             |             |         |
|                                |                       | [R2] INDICATES CHANGES MADE IN THIS REVISION. |                 |                 |                    |           |             |             |         |

- DOCUMENT REFERENCE:
- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
  - VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5004D
  - EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-7-2
  - CALCULATION NO. 12177-EQS-16
  - ASCO INSTALLATION AND MAINTENANCE INSTRUCTION FORM AND V-5999
- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 32 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN, BY ANALYSIS.





QUAL REF #\_C051MAL\_ REV 2

19-Mar-86

| EQUIPMENT DESCRIPTION          |                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|--------------------------------|--------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                |                          | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                |                          |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.:                     | 2RHS*LV17B               | OP.TIME:                                        | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 3                                          |
| SPEC NO.:                      | C051M                    | TEMP (F):                                       |                    |                    |                    |           |                |                | NOTE 1                                          |
| SYSTEM:                        | RESIDUAL HEAT<br>REMOVAL | NORMAL                                          | 120/85 [R2]        | 194                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                          |
|                                |                          | ABNORMAL                                        | 94 [R2]            | 194                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| TYPE: (DESCRIPTION)            |                          | ACCIDENT                                        | 175                | 380                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| LIMIT SWITCH                   |                          | PRESS (PSIG)                                    |                    |                    |                    |           |                |                | NOTE 1                                          |
|                                |                          | NORMAL                                          | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |                          | ABNORMAL                                        | NA                 | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| MANUFACTURER:                  | NAMCO                    | ACCIDENT                                        | 2.8                | 100                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| MODEL NO.:                     | EA740                    | RH (%):                                         |                    |                    |                    |           |                |                | NOTE 1                                          |
|                                |                          | NORMAL                                          | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |                          | ABNORMAL                                        | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| SAFETY FUNCTION:               | - - -                    | ACCIDENT                                        | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| INDICATING THE POSITION OF     |                          | RADIATION:                                      |                    |                    |                    |           |                |                | NOTE 1                                          |
| THE ISOLATION VALVES FOR       |                          | NORM GAMMA                                      | 1.1E6              |                    | 1                  |           |                | NA             |                                                 |
| STM CONDENSING MODE OF RHS     |                          | ACC GAMMA                                       | 1.1E6              | 2.04E8             | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| OP. CODE:                      | A                        | NORM BETA                                       | NA                 |                    | 1                  |           |                | NA             |                                                 |
|                                |                          | ACC BETA                                        | 7.3E3              |                    | 1                  |           |                | YES            |                                                 |
|                                |                          | NEUTRON                                         | NA                 |                    | 1                  |           |                | NA             |                                                 |
| ACCURACY - -                   |                          | SPRAY                                           | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| SPEC: NA                       |                          | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| DEMO: NA                       |                          |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.:                      | ABS17510                 |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE:                   | NA                       | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                |                                                 |
| SPRAY:                         | NA                       | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
|                                |                          | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
| EQUIPMENT NOT SUBJECT TO       |                          | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS              |
| SUBMERGENCE OR SPRAY           |                          | SDDF # IEEE-07.160-S005A                        |                    |                    |                    |           |                |                | MAX DESIGN/AVERAGE.                             |
|                                |                          | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                | 3.OPERABILITY PERIOD EXTENDED FROM 33           |
|                                |                          | FILE NO. FSK-27-7-2                             |                    |                    |                    |           |                |                | DAYS TESTED VALUE, TO 100 DAYS PLUS             |
| DOCUMENTATION ACCEPTABILITY:   |                          | 4. CALCULATION NO. 12177-EQS-059 [R2]           |                    |                    |                    |           |                |                | MARGIN, BY ANALYSIS.                            |
| ACCEPTABLE TO NUREG 0588,CAT I |                          |                                                 |                    |                    |                    |           |                |                |                                                 |
| MAINT/SURVEILL - - -           |                          |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                   |                          |                                                 |                    |                    |                    |           |                |                |                                                 |
| QUALIFIED LIFE - - -           |                          |                                                 |                    |                    |                    |           |                |                |                                                 |
| (YEARS): 16.8 [R2]             |                          |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                   |                          |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                          | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                |                                                 |



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| EQUIPMENT DESCRIPTION          |                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION    |                 |                 |                    |           |             |             |         |
|--------------------------------|-----------------------|-----------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |                       | PARAMETER                                     | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |                       |                                               |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                     | 2RHS*LV17B            | OP.TIME:                                      | .6 HRS          | >100 DAYS       | 3                  | 4         | AN+DATA     | YES         | NOTE 3  |
| SPEC NO.:                      | C051M                 | TEMP (F):                                     |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                        | RESIDUAL HEAT REMOVAL | NORMAL                                        | 120/85 [R2]     | 140             | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2  |
|                                |                       | ABNORMAL                                      | 94 [R2]         | 268             | 1                  | 2,4       | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)            |                       | ACCIDENT                                      | 175             | 346             | 1                  | 2,4       | TEST-SIM    | YES         |         |
| SOLENOID VALVE                 |                       | PRESS (PSIG)                                  |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                       | NORMAL                                        | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |                       | ABNORMAL                                      | NA              | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                  | ASCO                  | ACCIDENT                                      | 2.8             | 110             | 1                  | 2         | TEST-SIM    | YES         |         |
|                                |                       | RH (%)                                        |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                     | 206-380-3RF           | NORMAL                                        | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                | (120V 60HZ)           | ABNORMAL                                      | NA              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:               |                       | ACCIDENT                                      | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |         |
| ISOLATION VALVE FOR            |                       | RADIATION:                                    |                 |                 |                    |           |             |             | NOTE 1  |
| STM CONDENSING MODE OF RHS     |                       | NORM GAMMA                                    | 1.1E6           |                 | 1                  |           |             | NA          |         |
|                                |                       | ACC GAMMA                                     | 1.1E6           | 2.0E8           | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                      | A                     | NORM BETA                                     | NA              |                 | 1                  |           |             | NA          |         |
|                                |                       | ACC BETA                                      | 7.3E3           |                 | 1                  |           |             | YES         |         |
|                                |                       | NEUTRON                                       | NA              |                 | 1                  |           |             | NA          |         |
|                                |                       | SPRAY                                         | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ACCURACY - -                   |                       | SUBMERGENCE                                   | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                          | NA                    |                                               |                 |                 |                    |           |             |             |         |
| DEMO:                          | NA                    |                                               |                 |                 |                    |           |             |             |         |
| ZONE NO.:                      | ABS17510              |                                               |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                   | NA                    |                                               |                 |                 |                    |           |             |             |         |
| SPRAY:                         | NA                    |                                               |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |                       |                                               |                 |                 |                    |           |             |             |         |
| SUBMERGENCE OR SPRAY           |                       |                                               |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                       |                                               |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                       |                                               |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |                       |                                               |                 |                 |                    |           |             |             |         |
| REFERENCE: 4,5                 |                       |                                               |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |                       |                                               |                 |                 |                    |           |             |             |         |
| (YEARS): 40                    |                       |                                               |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                 |                       |                                               |                 |                 |                    |           |             |             |         |
|                                |                       | [R2] INDICATES CHANGES MADE IN THIS REVISION. |                 |                 |                    |           |             |             |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 32 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN, BY ANALYSIS.

DOCUMENT REFERENCE:  
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]  
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5004D  
3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-7-2  
4. CALCULATION NO. 12177-EQS-16.  
5. ASCO INSTALLATION AND MAINTENANCE INSTRUCTION FORM AND V-5999



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| EQUIPMENT DESCRIPTION          |                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                 |                 |                    |           |             |             |                                                 |
|--------------------------------|-----------------------|-------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|-------------------------------------------------|
|                                |                       | PARAMETER                                       | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                         |
|                                |                       |                                                 |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                 |
| EQUIP NO.:                     | 2RHS*PV21A            | OP.TIME:                                        | 6 HRS           | >100 DAYS       | 3                  | 4         | AN+DATA     | YES         | NOTE 3                                          |
| SPEC NO.:                      | C051M                 | TEMP (F):                                       |                 |                 |                    |           |             |             |                                                 |
| SYSTEM:                        | RESIDUAL HEAT REMOVAL | NORMAL                                          | 104/85          | 194             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2                                          |
|                                |                       | ABNORMAL                                        | 92              | 194             | 1                  | 2         | TEST-SIM    | NA          |                                                 |
| TYPE: (DESCRIPTION)            | ACCIDENT              | 175                                             | 380             | 1               | 2                  | TEST-SIM  | YES         |             |                                                 |
| LIMIT SWITCH                   | PRESS (PSIG)          |                                                 |                 |                 |                    |           |             |             | NOTE 1                                          |
|                                | NORMAL                | -0.25"WG                                        | ATMOS           | 1               | 2                  | TEST-SIM  | NA          |             |                                                 |
|                                | ABNORMAL              | NA                                              | ATMOS           | 1               | 2                  | TEST-SIM  | NA          |             |                                                 |
| MANUFACTURER:                  | NAMCO                 | ACCIDENT                                        | 2.8             | 100             | 1                  | 2         | TEST-SIM    | YES         |                                                 |
| MODEL NO.:                     | EA740                 | RH (%):                                         |                 |                 |                    |           |             |             | NOTE 1                                          |
|                                |                       | NORMAL                                          | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                 |
|                                |                       | ABNORMAL                                        | NA              | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                 |
| SAFETY FUNCTION:               | - - -                 | ACCIDENT                                        | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |                                                 |
| INDICATING THE POSITION OF     |                       | RADIATION:                                      |                 |                 |                    |           |             |             | NOTE 1                                          |
| THE ISOLATION VALVES FOR       |                       | NORM GAMMA                                      | 7.7E5           |                 | 1                  |           |             | NA          |                                                 |
| STM CONDENSING MODE OF RHS     |                       | ACC GAMMA                                       | 3.1E6 [R2]      | 2.04E8          | 1                  | 2         | TEST-SIM    | YES         |                                                 |
| OP. CODE:                      | A                     | NORM BETA                                       | NA              |                 | 1                  |           |             | NA          |                                                 |
|                                |                       | ACC BETA                                        | 7.3E3 [R2]      |                 | 1                  |           |             | YES         |                                                 |
|                                |                       | NEUTRON                                         | NA              |                 | 1                  |           |             | NA          |                                                 |
| ACCURACY - -                   |                       | SPRAY                                           | NA              | NA              | NA                 | NA        | NA          | NA          |                                                 |
| SPEC:                          | NA                    | SUBMERGENCE                                     | NA              | NA              | NA                 | NA        | NA          | NA          |                                                 |
| DEMO:                          | NA                    |                                                 |                 |                 |                    |           |             |             |                                                 |
| ZONE NO.:                      | SC175103              |                                                 |                 |                 |                    |           |             |             |                                                 |
| SUBMERGENCE:                   | NA                    | DOCUMENT REFERENCE:                             |                 |                 |                    |           |             |             |                                                 |
| SPRAY:                         | NA                    | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
|                                |                       | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                 |                 |                    |           |             |             | SEE THE DOCUMENT REFERENCED.                    |
| EQUIPMENT NOT SUBJECT TO       |                       | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS              |
| SUBMERGENCE OR SPRAY           |                       | SDDF # IEEE-07.160-5005A                        |                 |                 |                    |           |             |             | MAX DESIGN/AVERAGE.                             |
|                                |                       | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                 |                 |                    |           |             |             | 3.OPERABILITY PERIOD EXTENDED FROM 33           |
|                                |                       | FILE NO. FSK-27-7-2                             |                 |                 |                    |           |             |             | DAYS TESTED VALUE, TO 100 DAYS PLUS             |
| DOCUMENTATION ACCEPTABILITY:   |                       | 4. CALCULATION NO. 12177-EQS-059 [R2]           |                 |                 |                    |           |             |             | MARGIN, BY ANALYSIS.                            |
| ACCEPTABLE TO NUREG 0588,CAT I |                       |                                                 |                 |                 |                    |           |             |             |                                                 |
|                                |                       |                                                 |                 |                 |                    |           |             |             |                                                 |
| MAINT/SURVEILL - - -           |                       |                                                 |                 |                 |                    |           |             |             |                                                 |
| REFERENCE: 2                   |                       |                                                 |                 |                 |                    |           |             |             |                                                 |
| QUALIFIED LIFE - - -           |                       |                                                 |                 |                 |                    |           |             |             |                                                 |
| (YEARS): 16.8 [R2]             |                       |                                                 |                 |                 |                    |           |             |             |                                                 |
| REFERENCE: 2                   |                       |                                                 |                 |                 |                    |           |             |             |                                                 |
|                                |                       | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                 |                 |                    |           |             |             |                                                 |



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| EQUIPMENT DESCRIPTION          |                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|--------------------------------|-----------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |                       | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |                       |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                     | 2RHS*PV21A            | OP.TIME:                                   | 6 HRS           | >100 DAYS       | 3                  | 4         | AN+DATA     | YES         | NOTE 3  |
| SPEC NO.:                      | C051M                 | TEMP (F):                                  |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                        | RESIDUAL HEAT REMOVAL | NORMAL                                     | 104/85          | 140             | 1                  | 2,4       | TEST-SIM    | NA          | NOTE 2  |
|                                |                       | ABNORMAL                                   | 92              | 268             | 1                  | 2,4       | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)            |                       | ACCIDENT                                   | 175             | 346             | 1                  | 2,4       | TEST-SIM    | YES         |         |
| SOLENOID VALVE                 |                       | PRESS(PSIG)                                |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                       | NORMAL                                     | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |                       | ABNORMAL                                   | NA              | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                  | ASCO                  | ACCIDENT                                   | 2.8             | 110             | 1                  | 2         | TEST-SIM    | YES         |         |
|                                |                       | RH (%):                                    |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                     | 206-380-3RF           | NORMAL                                     | 50              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                | (120V 60HZ)           | ABNORMAL                                   | NA              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:               | - - -                 | ACCIDENT                                   | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |         |
| ISOLATION VALVE FOR            |                       | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1  |
| STM CONDENSING MODE OF RHS     |                       | NORM GAMMA                                 | 7.7E5           |                 | 1                  |           |             | NA          |         |
|                                |                       | ACC GAMMA                                  | 3.1E6 [R2]      | 2.0E8           | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                      | A                     | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                |                       | ACC BETA                                   | 7.3E3 [R2]      |                 | 1                  |           |             | YES         |         |
|                                |                       | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
| ACCURACY - -                   |                       | SPRAY                                      | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                          | NA                    | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| DEMO:                          | NA                    |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.:                      | SC175103              |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                   | NA                    |                                            |                 |                 |                    |           |             |             |         |
| SPRAY:                         | NA                    |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |                       |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE OR SPRAY           |                       |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                       |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                       |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |                       |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 4,5                 |                       |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |                       |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 40                    |                       |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                 |                       |                                            |                 |                 |                    |           |             |             |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5004D
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-7-2
- CALCULATION NO. 12177-EQS-16
- ASCO INSTALLATION AND MAINTENANCE INSTRUCTION FORM AND V-5999

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 32 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN, BY ANALYSIS.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





22-Mar-86

QUAL REF #\_C051MAN\_ REV 2

| EQUIPMENT DESCRIPTION          |                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
|--------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |                          | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2RHS*PV21B               | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                      | C051M                    | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM:                        | RESIDUAL HEAT<br>REMOVAL | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 104/85             | 140                | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
|                                |                          | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 92                 | 268                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)            |                          | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 175                | 346                | 1                  | 2,4       | TEST-SIM       | YES            |         |
| SOLENOID VALVE                 |                          | PRESS(PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                    |                    |           |                |                | NOTE 1  |
|                                |                          | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |                          | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                  | ASCO                     | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2.8                | 110                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                |                          | RH (%):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                     | 206-380-3RF              | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                | (120V 60HZ)              | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:               | - - -                    | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| ISOLATION VALVE FOR            |                          | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                | NOTE 1  |
| STM CONDENSING MODE OF RHS     |                          | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7.7E5              |                    | 1                  |           |                | NA             |         |
|                                |                          | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.1E6              | 2.0E8              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                      | A                        | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                          | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 7.3E3              |                    | 1                  |           |                | YES            |         |
|                                |                          | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                          | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                   |                          | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                          | NA                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| DEMO:                          | NA                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | SC175111                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| SPRAY:                         | NA                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY           |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| REFERENCE: 4,5                 |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| (YEARS): 40 [R2]               |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                 |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                    |                    |           |                |                |         |
|                                |                          | <p>DOCUMENT REFERENCE:</p> <p>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]</p> <p>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.160-5004D</p> <p>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-7-2</p> <p>4. CALCULATION NO. 12177-EQS-16</p> <p>5. ASCO INSTALLATION AND MAINTENANCE INSTRUCTION FORM AND V-5999</p> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.</p> <p>3.OPERABILITY PERIOD EXTENDED FROM 32 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN, BY ANALYSIS.</p> |                    |                    |                    |           |                |                |         |
|                                |                          | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |         |



| EQUIPMENT DESCRIPTION                         |                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------------------------------|--------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                               |                          | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                               |                          |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                    | 2RHS*PV21B               | OP. TIME:                                  | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.:                                     | C051M                    | TEMP (F):                                  | 104/85             | 194                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| SYSTEM:                                       | RESIDUAL HEAT<br>REMOVAL | ABNORMAL                                   | 92                 | 194                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                           | ACCIDENT                 | 175                                        | 380                | 1                  | 2                  | TEST-SIM  | YES            |                |         |
| LIMIT SWITCH                                  | PRESS (PSIG)             |                                            |                    |                    |                    |           |                |                | NOTE 1  |
|                                               | NORMAL                   | -0.25"WG                                   | ATMOS              | 1                  | 2                  | TEST-SIM  | NA             |                |         |
|                                               | ABNORMAL                 |                                            | ATMOS              | 1                  | 2                  | TEST-SIM  | NA             |                |         |
| MANUFACTURER:                                 | NAMCO                    | ACCIDENT                                   | 2.8                | 100                | 1                  | 2         | TEST-SIM       | YES            |         |
| MODEL NO.:                                    | EA740                    | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
|                                               |                          | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                               |                          | ABNORMAL                                   | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                              | - - -                    | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| INDICATING THE POSITION OF                    |                          | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| THE ISOLATION VALVES FOR                      |                          | NORM GAMMA                                 | 7.7E5              |                    | 1                  |           |                | NA             |         |
| ISTM CONDENSING MODE OF RHS                   |                          | ACC GAMMA                                  | 1.1E6              | 2.04E8             | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                     | A                        | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                               |                          | ACC BETA                                   | 17.3E3 [R2]        |                    | 1                  |           |                | YES            |         |
|                                               |                          | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                               |                          | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                                  |                          | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                                         | NA                       |                                            |                    |                    |                    |           |                |                |         |
| DEMO:                                         | NA                       |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                     | SC175111                 |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                  | NA                       |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                        | NA                       |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO                      |                          |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY                          |                          |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                  |                          |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I               |                          |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                          |                          |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                  |                          |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                          |                          |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 16.8 [R2]                            |                          |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                  |                          |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                          |                                            |                    |                    |                    |           |                |                |         |



| EQUIPMENT DESCRIPTION                                          |                             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                      |                    |                    |                    |           |                |                |                                                                                                      |
|----------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|------------------------------------------------------------------------------------------------------|
|                                                                |                             | PARAMETER                                                                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                              |
|                                                                |                             |                                                                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                      |
| EQUIP NO.:                                                     | 2CSH*HCV133                 |                                                                                                 |                    |                    |                    |           |                |                |                                                                                                      |
| SPEC NO.:                                                      | C051M                       | OP.TIME:                                                                                        | 100DAYS[R2]        | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 3                                                                                               |
| SYSTEM:                                                        | HIGH PRESSURE<br>CORE SPRAY | TEMP (F):                                                                                       |                    |                    |                    |           |                |                | NOTE 1                                                                                               |
|                                                                |                             | NORMAL                                                                                          | 104/93             | 194                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                               |
|                                                                |                             | ABNORMAL                                                                                        | 106                | 194                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                      |
| TYPE: (DESCRIPTION)                                            | LIMIT SWITCH                | ACCIDENT                                                                                        | 200                | 380                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                      |
|                                                                |                             | PRESS(PSIG)                                                                                     |                    |                    |                    |           |                |                | NOTE 1                                                                                               |
|                                                                |                             | NORMAL                                                                                          | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                      |
|                                                                |                             | ABNORMAL                                                                                        |                    | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                      |
| MANUFACTURER:                                                  | NAMCO                       | ACCIDENT                                                                                        | 2.8                | 100                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                      |
|                                                                |                             | RH (%)                                                                                          |                    |                    |                    |           |                |                | NOTE 1                                                                                               |
| MODEL NO.:                                                     | EA740                       | NORMAL                                                                                          | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                      |
|                                                                |                             | ABNORMAL                                                                                        | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                      |
| SAFETY FUNCTION:                                               | - - -                       | ACCIDENT                                                                                        | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                      |
| CORE SPRAY TEST BYPASS                                         |                             | RADIATION:                                                                                      |                    |                    |                    |           |                |                | NOTE 1                                                                                               |
| VALVE POSITION INDICATOR                                       |                             | NORM GAMMA                                                                                      | 2E6                |                    | 1                  |           |                | NA             |                                                                                                      |
|                                                                |                             | ACC GAMMA                                                                                       | 5.8E7 [R2]         | 2.04E8             | 1                  | 2         | TEST-SIM       | YES            |                                                                                                      |
| OP. CODE:                                                      | A                           | NORM BETA                                                                                       | NA                 |                    | 1                  |           |                | NA             |                                                                                                      |
|                                                                |                             | ACC BETA                                                                                        | 6.1E6 [R2]         |                    | 1                  |           |                | YES            |                                                                                                      |
|                                                                |                             | NEUTRON                                                                                         | NA                 |                    | 1                  |           |                | NA             |                                                                                                      |
|                                                                |                             | SPRAY                                                                                           | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                      |
| ACCURACY - -                                                   |                             | SUBMERGENCE                                                                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                      |
| SPEC:                                                          | NA                          |                                                                                                 |                    |                    |                    |           |                |                |                                                                                                      |
| DEMO:                                                          | NA                          |                                                                                                 |                    |                    |                    |           |                |                |                                                                                                      |
| ZONE NO.:                                                      | SC215122                    |                                                                                                 |                    |                    |                    |           |                |                |                                                                                                      |
| SUBMERGENCE:                                                   | NA                          | DOCUMENT REFERENCE:                                                                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED.                      |
| SPRAY:                                                         | NA                          | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN<br>CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS<br>MAX DESIGN/AVERAGE.                                            |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY               |                             | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,<br>SDDF # IEEE-07.160-5005A                       |                    |                    |                    |           |                |                | 3.OPERABILITY PERIOD EXTENDED FROM 33<br>DAYS TESTED VALUE, TO 100 DAYS PLUS<br>MARGIN, BY ANALYSIS. |
|                                                                |                             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:<br>FILE NO. 27-4                                      |                    |                    |                    |           |                |                |                                                                                                      |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                             | 4. CALCULATION NO. 12177-EQS-059 [R2]                                                           |                    |                    |                    |           |                |                |                                                                                                      |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |                             |                                                                                                 |                    |                    |                    |           |                |                |                                                                                                      |
| QUALIFIED LIFE - - -<br>(YEARS): 16.8 [R2]<br>REFERENCE: 2     |                             |                                                                                                 |                    |                    |                    |           |                |                |                                                                                                      |
|                                                                |                             | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                   |                    |                    |                    |           |                |                |                                                                                                      |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |             | PARAMETER    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|--------------------------------|-------------|--------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |             |              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2ICS*PNL115 | OP.TIME:     | 12 HOURS           | 30 DAYS            | 3                  | 2         | AN & DATA      | YES            |         |
| SPEC NO.:                      | C051M       | TEMP (F):    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        |         |
| SYSTEM:                        |             | NORMAL       | 104/89             | 125                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
| REACTOR CORE ISOLATION         |             | ABNORMAL     | -                  |                    | 1                  | 2         |                | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)            |             | ACCIDENT     | NA                 |                    | 1                  | 2         |                | NA             |         |
| SERVO AMPLIFIER                |             | PRESS (PSIG) | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                |             | NORMAL       | -.25"WG            |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |             | ABNORMAL     | -                  |                    | 1                  | 2         |                | NA             |         |
| MANUFACTURER:                  | BORG WARNER | ACCIDENT     | NA                 |                    | 1                  | 2         |                | NA             |         |
| MODEL NO.:                     | 85960       | RH (%):      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                |             | NORMAL       | 50                 |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |             | ABNORMAL     | NA                 |                    | 1                  | 2         |                | NA             |         |
| SAFETY FUNCTION:               | - - -       | ACCIDENT     | NA [R2]            |                    | 1                  | 2         |                | NA             |         |
| PROVIDES ELECTRONIC INTERFACE  |             | RADIATION:   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| WITH ELECTRO-HYDRAULIC         |             | NORM GAMMA   | 1.8E3              |                    | 1                  | 2         |                | NA             |         |
| ACTUATOR                       |             | ACC GAMMA    | 7.0E2              | 1E4                | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                      | A           | NORM BETA    | NA                 |                    | 1                  | 2         |                | NA             |         |
|                                |             | ACC BETA     | NA                 |                    | 1                  | 2         |                | NA             |         |
|                                |             | NEUTRON      | NA                 |                    | 1                  | 2         |                | NA             |         |
|                                |             | SPRAY        | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                   |             | SUBMERGENCE  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                          | NA          |              |                    |                    |                    |           |                |                |         |
| DEMO:                          | NA          |              |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | ABN24033    |              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA          |              |                    |                    |                    |           |                |                |         |
| SPRAY:                         | NA          |              |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |             |              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY           |             |              |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |             |              |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |             |              |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |             |              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |             |              |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |             |              |                    |                    |                    |           |                |                |         |
| (YEARS): 5                     |             |              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |             |              |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:  
 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R1]  
 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.160-5001B  
 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. FSK-27-6-C4

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

[R1] INDICATES CHANGES MADE IN THIS REVISION.





| EQUIPMENT DESCRIPTION                          |                                                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|------------------------------------------------|--------------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                |                                                  | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                |                                                  |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                     | 2HVR*TIS16A                                      | OP.TIME:                                   | 100 DAYS        | >100 DAYS       | 3                  | 2         | TEST-SIM    | YES         |         |
| SPEC NO.:                                      | C071A                                            | TEMP (F):                                  |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                                        | REACTOR BUILDING VENTILATION                     | NORMAL                                     | 104/88          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                                |                                                  | ABNORMAL                                   | NA [R2]         | 120             | 1                  | 2         | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)                            | TEMPERATURE SWITCH                               | ACCIDENT                                   | NA              | 255             | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                |                                                  | PRESS (PSIG)                               |                 |                 |                    |           |             |             | NOTE 1  |
|                                                |                                                  | NORMAL                                     | -0.25" WG       | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                |                                                  | ABNORMAL                                   | NA [R2]         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                                  | UNITED ELECTRIC                                  | ACCIDENT                                   | NA              | 18              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                |                                                  | IRH (%)                                    |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                                     | 802P-5AS                                         | NORMAL                                     | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                |                                                  | ABNORMAL                                   | NA [R2]         | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:                               | - - -                                            | ACCIDENT                                   | NA              | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                | START UNIT COOLER UPON REACHING HIGH TEMPERATURE | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1  |
|                                                |                                                  | NORM GAMMA                                 | 1.8E3           |                 | 1                  |           |             | NA          |         |
|                                                |                                                  | ACC GAMMA                                  | 2.2E4           | 1E7             | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                                      | A                                                | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                                |                                                  | ACC BETA                                   | NA              |                 | 1                  |           |             | NA          |         |
|                                                |                                                  | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                                |                                                  | SPRAY                                      | NA              | NA              | NA                 |           | NA          | NA          |         |
| ACCURACY - -                                   |                                                  | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
|                                                | SPEC: +/-1.0% SPAN                               |                                            |                 |                 |                    |           |             |             |         |
|                                                | DEMO: +/-0.3% SPAN                               |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.:                                      | ABS24036                                         |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                   | NA                                               |                                            |                 |                 |                    |           |             |             |         |
| SPRAY:                                         | NA                                               |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY. |                                                  |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                   |                                                  |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588, CAT I                |                                                  |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                           |                                                  |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                   |                                                  |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                           |                                                  |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 10                                    |                                                  |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                   |                                                  |                                            |                 |                 |                    |           |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.  |                                                  |                                            |                 |                 |                    |           |             |             |         |

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



QUAL REF #\_C071AAB REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION                             |                                                     | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------------------------|-----------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                   |                                                     | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                   |                                                     |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                        | 2HVR*TIS16B                                         | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.:                                         | C071A                                               | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                                           | REACTOR BUILDING<br>VENTILATION                     | NORMAL                                     | 104/88             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                   |                                                     | ABNORMAL                                   | NA [R2]            | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                                   |                                                     | ACCIDENT                                   | NA                 | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)                               | TEMPERATURE SWITCH                                  | PRESS(PSIG)                                |                    |                    |                    |           |                |                |         |
|                                                   |                                                     | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                   |                                                     | ABNORMAL                                   | NA [R2]            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                   |                                                     | ACCIDENT                                   | NA                 | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
| MANUFACTURER:                                     | UNITED ELECTRIC                                     | RH (%)                                     |                    |                    |                    |           |                |                |         |
|                                                   |                                                     | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                   |                                                     | ABNORMAL                                   | NA [R2]            | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                   |                                                     | ACCIDENT                                   | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                  | START UNIT COOLER UPON<br>REACHING HIGH TEMPERATURE | RADIATION:                                 |                    |                    |                    |           |                |                |         |
|                                                   |                                                     | NORM GAMMA                                 | 1.8E3              |                    | 1                  |           |                | NA             | NOTE 1  |
|                                                   |                                                     | ACC GAMMA                                  | 2.2E4              | 1E7                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                   |                                                     | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                   |                                                     | ACC BETA                                   | NA                 |                    | 1                  |           |                | NA             |         |
|                                                   |                                                     | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                   |                                                     | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
|                                                   |                                                     | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                                      |                                                     |                                            |                    |                    |                    |           |                |                |         |
|                                                   | SPEC: +/-1.0% SPAN                                  |                                            |                    |                    |                    |           |                |                |         |
|                                                   | DEMO: +/-0.3% SPAN                                  |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                         | ABS24036                                            |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                      | NA                                                  |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                            | NA                                                  |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY. |                                                     |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                      |                                                     |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I                    |                                                     |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                              |                                                     |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                      |                                                     |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                              |                                                     |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 10                                       |                                                     |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                      |                                                     |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.     |                                                     |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A
3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



QUAL REF #\_C071AAC REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION                          |                                                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION    |                 |                 |                    |           |             |             |         |
|------------------------------------------------|--------------------------------------------------|-----------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                |                                                  | PARAMETER                                     | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                |                                                  |                                               |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                     | 2HVR*TIS19A                                      | OP.TIME:                                      | 100 DAYS        | >100 DAYS       | 3                  | 2         | TEST-SIM    | YES         |         |
| SPEC NO.:                                      | C071A                                            | TEMP (F):                                     |                 |                 |                    |           |             |             |         |
| SYSTEM:                                        | REACTOR BUILDING VENTILATION                     | NORMAL                                        | 104/89          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
|                                                |                                                  | ABNORMAL                                      | NA [R2]         | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)                            | TEMPERATURE SWITCH                               | ACCIDENT                                      | NA              | 255             | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                |                                                  | PRESS (PSIG)                                  |                 |                 |                    |           |             |             | NOTE 1  |
|                                                |                                                  | NORMAL                                        | -0.25" WG       | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                |                                                  | ABNORMAL                                      | NA [R2]         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                                  | UNITED ELECTRIC                                  | ACCIDENT                                      | NA              | 18              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                |                                                  | RH (%):                                       |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                                     | 802P-5AS                                         | NORMAL                                        | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                |                                                  | ABNORMAL                                      | NA [R2]         | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:                               | START UNIT COOLER UPON REACHING HIGH TEMPERATURE | ACCIDENT                                      | NA              | 100             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
|                                                |                                                  | RADIATION:                                    |                 |                 |                    |           |             |             |         |
|                                                |                                                  | NORM GAMMA                                    | 1.8E3           |                 | 1                  |           |             | NA          |         |
|                                                |                                                  | ACC GAMMA                                     | 2.2E4           | 1E7             | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                                      | A                                                | NORM BETA                                     | NA              |                 | 1                  |           |             | NA          |         |
|                                                |                                                  | ACC BETA                                      | NA              |                 | 1                  |           |             | NA          |         |
|                                                |                                                  | NEUTRON                                       | NA              |                 | 1                  |           |             | NA          |         |
|                                                |                                                  | SPRAY                                         | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ACCURACY - -                                   |                                                  | SUBMERGENCE                                   | NA              | NA              | NA                 | NA        | NA          | NA          |         |
|                                                | SPEC: +/-1.0% SPAN                               |                                               |                 |                 |                    |           |             |             |         |
|                                                | DEMO: +/-0.3% SPAN                               |                                               |                 |                 |                    |           |             |             |         |
| ZONE NO.:                                      | ABN24033                                         |                                               |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                   | NA                                               |                                               |                 |                 |                    |           |             |             |         |
| SPRAY:                                         | NA                                               |                                               |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY. |                                                  |                                               |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                   |                                                  |                                               |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588, CAT I                |                                                  |                                               |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                           |                                                  |                                               |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                   |                                                  |                                               |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                           |                                                  |                                               |                 |                 |                    |           |             |             |         |
| (YEARS): 10                                    |                                                  |                                               |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                   |                                                  |                                               |                 |                 |                    |           |             |             |         |
|                                                |                                                  | [R2] INDICATES CHANGES MADE IN THIS REVISION. |                 |                 |                    |           |             |             |         |

- DOCUMENT REFERENCE:
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
  2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A
  3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3

- NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



09-Feb-86

[illegible]





QUAL REF #\_C071AAE REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION                          |                                                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |                                                                               |                |                |         |
|------------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-------------------------------------------------------------------------------|----------------|----------------|---------|
|                                                |                                                  | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                               | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                |                                                  |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED                                                                     |                |                |         |
| EQUIP NO.:                                     | 2HVR*TIS22A                                      | OP. TIME:                                                                                    | 100 DAYS           | >100 DAYS          | 3                  | 2                                                                             | TEST-SIM       | YES            |         |
| SPEC NO.:                                      | C071A                                            | TEMP (F):                                                                                    |                    |                    |                    |                                                                               |                |                |         |
| SYSTEM:                                        | REACTOR BUILDING VENTILATION                     | NORMAL                                                                                       | 120/85 [R2]        | 120                | 1                  | 2                                                                             | TEST-SIM       | NA             | NOTE 1  |
|                                                |                                                  | ABNORMAL                                                                                     | 95                 | 120                | 1                  | 2                                                                             | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)                            | TEMPERATURE SWITCH                               | ACCIDENT                                                                                     | 175                | 255                | 1                  | 2                                                                             | TEST-SIM       | YES            |         |
|                                                |                                                  | PRESS (PSIG)                                                                                 |                    |                    |                    |                                                                               |                |                | NOTE 1  |
|                                                |                                                  | NORMAL                                                                                       | -0.25" WG          | ATMOS              | 1                  | 2                                                                             | TEST-SIM       | NA             |         |
|                                                |                                                  | ABNORMAL                                                                                     | -0.25" WG          | ATMOS              | 1                  | 2                                                                             | TEST-SIM       | NA             |         |
| MANUFACTURER:                                  | UNITED ELECTRIC                                  | ACCIDENT                                                                                     | 2.8                | 18                 | 1                  | 2                                                                             | TEST-SIM       | YES            |         |
|                                                |                                                  | RH (%):                                                                                      |                    |                    |                    |                                                                               |                |                | NOTE 1  |
| MODEL NO.:                                     | 802P-5AS                                         | NORMAL                                                                                       | 50                 | 59                 | 1                  | 2                                                                             | TEST-SIM       | NA             |         |
|                                                |                                                  | ABNORMAL                                                                                     | 50                 | 59                 | 1                  | 2                                                                             | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                               | START UNIT COOLER UPON REACHING HIGH TEMPERATURE | ACCIDENT                                                                                     | 100                | 100                | 1                  | 2                                                                             | TEST-SIM       | NA             |         |
|                                                |                                                  | RADIATION:                                                                                   |                    |                    |                    |                                                                               |                |                | NOTE 1  |
|                                                |                                                  | NORM GAMMA                                                                                   | 2.6E5              |                    | 4                  |                                                                               |                | NA             |         |
|                                                |                                                  | ACC GAMMA                                                                                    | 3.6E6              | 1E7                | 4                  | 2                                                                             | TEST-SIM       | YES            |         |
| OP. CODE:                                      | A                                                | NORM BETA                                                                                    | NA                 |                    | 4                  |                                                                               |                | NA             |         |
|                                                |                                                  | ACC BETA                                                                                     | 6.1E6              |                    | 4                  |                                                                               |                | YES            |         |
|                                                |                                                  | NEUTRON                                                                                      | NA                 |                    | 4                  |                                                                               |                | NA             |         |
|                                                |                                                  | SPRAY                                                                                        | NA                 | NA                 | NA                 | NA                                                                            | NA             | NA             |         |
| ACCURACY - -                                   |                                                  | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA                                                                            | NA             | NA             |         |
|                                                |                                                  | SPEC:                                                                                        | +/-1.0% SPAN       |                    |                    |                                                                               |                |                |         |
|                                                |                                                  | DEMO:                                                                                        | +/-0.3% SPAN       |                    |                    |                                                                               |                |                |         |
| ZONE NO.:                                      | ABN17503                                         |                                                                                              |                    |                    |                    |                                                                               |                |                |         |
| SUBMERGENCE:                                   | NA                                               |                                                                                              |                    |                    |                    |                                                                               |                |                |         |
| SPRAY:                                         | NA                                               |                                                                                              |                    |                    |                    |                                                                               |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY. |                                                  |                                                                                              |                    |                    |                    |                                                                               |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                   |                                                  |                                                                                              |                    |                    |                    |                                                                               |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I                |                                                  |                                                                                              |                    |                    |                    |                                                                               |                |                |         |
|                                                |                                                  | DOCUMENT REFERENCE:                                                                          |                    |                    |                    | NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED. |                |                |         |
|                                                |                                                  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    | 2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                       |                |                |         |
|                                                |                                                  | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A                       |                    |                    |                    |                                                                               |                |                |         |
|                                                |                                                  | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3                                   |                    |                    |                    |                                                                               |                |                |         |
|                                                |                                                  | 4. CALCULATION NO. 12177-PR(C)-22-0                                                          |                    |                    |                    |                                                                               |                |                |         |
| MAINT/SURVEILL - - -                           |                                                  |                                                                                              |                    |                    |                    |                                                                               |                |                |         |
| REFERENCE: 2                                   |                                                  |                                                                                              |                    |                    |                    |                                                                               |                |                |         |
| QUALIFIED LIFE - - -                           |                                                  |                                                                                              |                    |                    |                    |                                                                               |                |                |         |
| (YEARS): 10                                    |                                                  |                                                                                              |                    |                    |                    |                                                                               |                |                |         |
| REFERENCE: 2                                   |                                                  |                                                                                              |                    |                    |                    |                                                                               |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.  |                                                  |                                                                                              |                    |                    |                    |                                                                               |                |                |         |



QUAL REF #\_C071AAF REV 2

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| EQUIPMENT DESCRIPTION                                           |                                                     | ENVIRONMENTAL CONDITIONS AND QUALIFICATION    |                    |                    |                    |           |                |                |         |
|-----------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                 |                                                     | PARAMETER                                     | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                 |                                                     |                                               |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                      | 2HVR*TIS22B                                         | OP.TIME:                                      | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.:                                                       | C071A                                               | TEMP (F):                                     |                    |                    |                    |           |                |                |         |
| SYSTEM:                                                         | REACTOR BUILDING<br>VENTILATION                     | NORMAL                                        | 120/85 [R2]        | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                                 |                                                     | ABNORMAL                                      | 95                 | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)                                             | TEMPERATURE SWITCH                                  | ACCIDENT                                      | 175                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                 |                                                     | PRESS (PSIG)                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                 |                                                     | NORMAL                                        | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 |                                                     | ABNORMAL                                      | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                                   | UNITED ELECTRIC                                     | ACCIDENT                                      | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                 |                                                     | RH (%)                                        |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                                                      | 802P-SAS                                            | NORMAL                                        | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 |                                                     | ABNORMAL                                      | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                                | START UNIT COOLER UPON<br>REACHING HIGH TEMPERATURE | ACCIDENT                                      | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                 |                                                     | RADIATION:                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                 |                                                     | NORM GAMMA                                    | 2.6E5              |                    | 4                  |           |                | NA             |         |
|                                                                 |                                                     | ACC GAMMA                                     | 3.6E6              | 1E7                | 4                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                                       | A                                                   | NORM BETA                                     | NA                 |                    | 4                  |           |                | NA             |         |
|                                                                 |                                                     | ACC BETA                                      | 6.1E6              |                    | 4                  |           |                | YES            |         |
|                                                                 |                                                     | NEUTRON                                       | NA                 |                    | 4                  |           |                | NA             |         |
|                                                                 |                                                     | SPRAY                                         | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                                                    |                                                     | SUBMERGENCE                                   | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
|                                                                 | SPEC: +/-1.0% SPAN                                  |                                               |                    |                    |                    |           |                |                |         |
|                                                                 | DEMO: +/-0.3% SPAN                                  |                                               |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                       | ABN17503                                            |                                               |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                    | NA                                                  |                                               |                    |                    |                    |           |                |                |         |
| SPRAY:                                                          | NA                                                  |                                               |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY.               |                                                     |                                               |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588, CAT I |                                                     |                                               |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                            |                                                     |                                               |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 10<br>REFERENCE: 2             |                                                     |                                               |                    |                    |                    |           |                |                |         |
|                                                                 |                                                     | [R2] INDICATES CHANGES MADE IN THIS REVISION. |                    |                    |                    |           |                |                |         |

- DOCUMENT REFERENCE:
- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
  - VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A
  - EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3
  - CALCULATION NO. 12177-PR(C)-22-0
- NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



[illegible]



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                                   |  | PARAMETER   | SPECIFIED VALUE    | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|-------------------------------------------------------------------------|--|-------------|--------------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                                         |  |             |                    |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2HVR*TIS23B                                                  |  | OP.TIME:    | 100 DAYS           | >100 DAYS       | 3                  | 2         | TEST-SIM    | YES         |         |
| SPEC NO.: C071A                                                         |  | TEMP (F):   | NORMAL 120/85 [R2] | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
| SYSTEM: REACTOR BUILDING VENTILATION                                    |  | ABNORMAL    | 97                 | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
| TYPE: (DESCRIPTION) TEMPERATURE SWITCH                                  |  | ACCIDENT    | 175                | 255             | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                                         |  | PRESS(PSIG) | NORMAL -0.25"WG    | ATMOS           | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
|                                                                         |  | ABNORMAL    | -0.25"WG           | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: UNITED ELECTRIC                                           |  | ACCIDENT    | 2.8                | 18              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                                         |  | RH (%):     | NORMAL 50          | 59              | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
| MODEL NO.: 802P-5AS                                                     |  | ABNORMAL    | 50                 | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - - START UNIT COOLER UPON REACHING HIGH TEMPERATURE |  | ACCIDENT    | 100                | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                         |  | RADIATION:  | NORM GAMMA         |                 |                    |           |             |             | NOTE 1  |
|                                                                         |  | ACC GAMMA   | 4.79E6             | 1E7             | 4                  | 2         | TEST-SIM    | YES         | NOTE 3  |
| OP. CODE: A                                                             |  | NORM BETA   |                    |                 |                    |           |             |             |         |
|                                                                         |  | ACC BETA    |                    |                 |                    |           |             |             |         |
|                                                                         |  | NEUTRON     |                    |                 |                    |           |             |             |         |
|                                                                         |  | SPRAY       | NA                 | NA              | NA                 | NA        | NA          | NA          |         |
| ACCURACY - - SPEC: +/-1.0% SPAN<br>DEMO: +/-0.3% SPAN                   |  | SUBMERGENCE | NA                 | NA              | NA                 | NA        | NA          | NA          |         |
| IZONE NO.: ABS17508                                                     |  |             |                    |                 |                    |           |             |             |         |
| SUBMERGENCE: NA                                                         |  |             |                    |                 |                    |           |             |             |         |
| SPRAY: NA                                                               |  |             |                    |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.                          |  |             |                    |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I          |  |             |                    |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                                    |  |             |                    |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -<br>(YEARS): 10<br>REFERENCE: 2                     |  |             |                    |                 |                    |           |             |             |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.





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09-Feb-86

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## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                        |                                                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|--------------------------------------------------------------|--------------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                              |                                                  | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                              |                                                  |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                                   | 2HVR*TIS24A                                      | OP. TIME:                                  | 100 DAYS        | >100 DAYS       | 3                  | 2         | TEST-SIM    | YES         |         |
| SPEC NO.:                                                    | C071A                                            | TEMP (F):                                  |                 |                 |                    |           |             |             |         |
| SYSTEM:                                                      | REACTOR BUILDING VENTILATION                     | NORMAL                                     | 120/85 [R2]     | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
|                                                              |                                                  | ABNORMAL                                   | 102             | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)                                          | TEMPERATURE SWITCH                               | ACCIDENT                                   | 175             | 255             | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                              |                                                  | PRESS (PSIG)                               |                 |                 |                    |           |             |             | NOTE 1  |
|                                                              |                                                  | NORMAL                                     | -.25"WG         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                              |                                                  | ABNORMAL                                   | -.25"WG         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                                                | UNITED ELECTRIC                                  | ACCIDENT                                   | 2.8             | 18              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                              |                                                  | RH (%):                                    |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                                                   | 802P-5AS                                         | NORMAL                                     | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                              |                                                  | ABNORMAL                                   | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:                                             | - - -                                            | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                              | START UNIT COOLER UPON REACHING HIGH TEMPERATURE | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1  |
|                                                              |                                                  | NORM GAMMA                                 | 1.8E3           |                 | 4                  |           |             | NA          |         |
|                                                              |                                                  | ACC GAMMA                                  | 2.9E6           | 1E7             | 4                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                                                    | A                                                | NORM BETA                                  | NA              |                 | 4                  |           |             | NA          |         |
|                                                              |                                                  | ACC BETA                                   | 6.1E6           |                 | 4                  |           |             | YES         |         |
|                                                              |                                                  | NEUTRON                                    | NA              |                 | 4                  |           |             | NA          |         |
|                                                              |                                                  | SPRAY                                      | NA              | NA              | NA                 | NA        | NA          | NA          |         |
|                                                              |                                                  | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| =====                                                        |                                                  |                                            |                 |                 |                    |           |             |             |         |
| ACCURACY - -                                                 |                                                  |                                            |                 |                 |                    |           |             |             |         |
|                                                              | SPEC: +/-1.0% SPAN                               |                                            |                 |                 |                    |           |             |             |         |
|                                                              | DEMO: +/-0.3% SPAN                               |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.:                                                    | SC175108                                         |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                                 | NA                                               |                                            |                 |                 |                    |           |             |             |         |
| SPRAY:                                                       | NA                                               |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.               |                                                  |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588, CAT I |                                                  |                                            |                 |                 |                    |           |             |             |         |
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## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



QUAL REF #\_C071AAD REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION                          |                                                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |        |         |
|------------------------------------------------|--------------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|--------|---------|
|                                                |                                                  | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN | REMARKS |
|                                                |                                                  |                                            |                 |                 | SPECIFIED          | QUALIFIED |             | DEMO   |         |
| EQUIP NO.:                                     | 2HVR*TIS25A                                      | OP.TIME:                                   | 100 DAYS        | >100 DAYS       | 3                  | 2         | TEST-SIM    | YES    |         |
| SPEC NO.:                                      | C071A                                            | TEMP (F):                                  |                 |                 |                    |           |             |        |         |
| SYSTEM:                                        | REACTOR BUILDING VENTILATION                     | NORMAL                                     | 104/85          | 120             | 1                  | 2         | TEST-SIM    | NA     | NOTE 1  |
|                                                |                                                  | ABNORMAL                                   | 92              | 120             | 1                  | 2         | TEST-SIM    | NA     | NOTE 2  |
|                                                |                                                  | ACCIDENT                                   | 175             | 255             | 1                  | 2         | TEST-SIM    | YES    |         |
| TYPE: (DESCRIPTION)                            | TEMPERATURE SWITCH                               | PRESS(PSIG)                                |                 |                 |                    |           |             |        | NOTE 1  |
|                                                |                                                  | NORMAL                                     | -.25"WG         | ATMOS           | 1                  | 2         | TEST-SIM    | NA     |         |
|                                                |                                                  | ABNORMAL                                   | -.25"WG         | ATMOS           | 1                  | 2         | TEST-SIM    | NA     |         |
| MANUFACTURER:                                  | UNITED ELECTRIC                                  | ACCIDENT                                   | 2.8             | 18              | 1                  | 2         | TEST-SIM    | YES    |         |
|                                                |                                                  | RH (%):                                    |                 |                 |                    |           |             |        | NOTE 1  |
| MODEL NO.:                                     | 802P-5AS                                         | NORMAL                                     | 50              | 59              | 1                  | 2         | TEST-SIM    | NA     |         |
|                                                |                                                  | ABNORMAL                                   | 50              | 59              | 1                  | 2         | TEST-SIM    | NA     |         |
| SAFETY FUNCTION:                               | START UNIT COOLER UPON REACHING HIGH TEMPERATURE | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM    | NA     |         |
|                                                |                                                  | RADIATION:                                 |                 |                 |                    |           |             |        | NOTE 1  |
|                                                |                                                  | NORM GAMMA                                 |                 |                 |                    |           |             |        |         |
|                                                |                                                  | ACC GAMMA                                  | 3.54E6          | 1E7             | 4                  | 2         | TEST-SIM    | YES    | NOTE 3  |
|                                                |                                                  | NORM BETA                                  |                 |                 |                    |           |             |        |         |
|                                                |                                                  | ACC BETA                                   |                 |                 |                    |           |             |        |         |
|                                                |                                                  | NEUTRON                                    |                 |                 |                    |           |             |        |         |
| OP. CODE:                                      | A                                                | SPRAY                                      | NA              | NA              | NA                 | NA        | NA          | NA     |         |
|                                                |                                                  | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA     |         |
| ACCURACY - -                                   |                                                  |                                            |                 |                 |                    |           |             |        |         |
|                                                |                                                  | SPEC:                                      | +/-1.0% SPAN    |                 |                    |           |             |        |         |
|                                                |                                                  | DEMO:                                      | +/-0.3% SPAN    |                 |                    |           |             |        |         |
| ZONE NO.:                                      | SC196116                                         |                                            |                 |                 |                    |           |             |        |         |
| SUBMERGENCE:                                   | NA                                               |                                            |                 |                 |                    |           |             |        |         |
| SPRAY:                                         | NA                                               |                                            |                 |                 |                    |           |             |        |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY. |                                                  |                                            |                 |                 |                    |           |             |        |         |
| DOCUMENTATION ACCEPTABILITY:                   |                                                  |                                            |                 |                 |                    |           |             |        |         |
| ACCEPTABLE TO NUREG 0588,CAT 1                 |                                                  |                                            |                 |                 |                    |           |             |        |         |
| MAINT/SURVEILL - - -                           |                                                  |                                            |                 |                 |                    |           |             |        |         |
| REFERENCE: 2                                   |                                                  |                                            |                 |                 |                    |           |             |        |         |
| QUALIFIED LIFE - - -                           |                                                  |                                            |                 |                 |                    |           |             |        |         |
| (YEARS): 10                                    |                                                  |                                            |                 |                 |                    |           |             |        |         |
| REFERENCE: 2                                   |                                                  |                                            |                 |                 |                    |           |             |        |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.  |                                                  |                                            |                 |                 |                    |           |             |        |         |

- DOCUMENT REFERENCE:
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
  2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A
  3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3
  4. CALCULATION NO. 12177-EQS-50

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.COMBINED RADIATION FOR GAMMA AND BETA FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION IS 3.54E6 RADS.









09-Feb-86

| EQUIPMENT DESCRIPTION                                          |                                                     | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |    |                |                 |         |
|----------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|----|----------------|-----------------|---------|
|                                                                |                                                     | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |    | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS |
| SPECIFIED                                                      | QUALIFIED                                           |                                            |                    |                    |                    |    |                |                 |         |
| EQUIP NO.:                                                     | 2HVR*TIS2SC                                         | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2  | TEST-SIM       | YES             |         |
| SPEC NO.:                                                      | C071A                                               | TEMP (F):                                  |                    |                    |                    |    |                |                 |         |
| SYSTEM:                                                        | REACTOR BUILDING                                    | NORMAL                                     | 104/85             | 120                | 1                  | 2  | TEST-SIM       | NA              | NOTE 1  |
|                                                                | VENTILATION                                         | ABNORMAL                                   | 92                 | 120                | 1                  | 2  | TEST-SIM       | NA              | NOTE 2  |
| TYPE: (DESCRIPTION)                                            | TEMPERATURE SWITCH                                  | ACCIDENT                                   | 190 [R2]           | 255                | 1                  | 2  | TEST-SIM       | YES             |         |
|                                                                |                                                     | PRESS(PSIG)                                |                    |                    |                    |    |                |                 |         |
| MANUFACTURER: UNITED ELECTRIC                                  |                                                     | NORMAL                                     | -.25"WG            | ATMOS              | 1                  | 2  | TEST-SIM       | NA              |         |
|                                                                |                                                     | ABNORMAL                                   | -.25"WG            | ATMOS              | 1                  | 2  | TEST-SIM       | NA              |         |
|                                                                |                                                     | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2  | TEST-SIM       | YES             |         |
| MODEL NO.:                                                     | 802P-5AS                                            | RH (%):                                    |                    |                    |                    |    |                |                 | NOTE 1  |
|                                                                |                                                     | NORMAL                                     | 50                 | 59                 | 1                  | 2  | TEST-SIM       | NA              |         |
|                                                                |                                                     | ABNORMAL                                   | 50                 | 59                 | 1                  | 2  | TEST-SIM       | NA              |         |
| SAFETY FUNCTION: - - -                                         | START UNIT COOLER UPON<br>REACHING HIGH TEMPERATURE | ACCIDENT                                   | 100                | 100                | 1                  | 2  | TEST-SIM       | NA              |         |
|                                                                |                                                     | RADIATION:                                 |                    |                    |                    |    |                |                 |         |
| OP. CODE: A                                                    |                                                     | NORM GAMMA                                 | 1.1E6              |                    | 4                  |    |                | NA              |         |
|                                                                |                                                     | ACC GAMMA                                  | 5E5                | 1E7                | 4                  | 2  | TEST-SIM       | YES             |         |
|                                                                |                                                     | NORM BETA                                  | NA                 |                    | 4                  |    |                | NA              |         |
|                                                                |                                                     | ACC BETA                                   | 6.1E6              |                    | 4                  |    |                | YES             |         |
|                                                                |                                                     | NEUTRON                                    | NA                 |                    | 4                  |    |                | NA              |         |
| ACCURACY - -                                                   |                                                     | SPRAY                                      | NA                 | NA                 | NA                 | NA | NA             | NA              |         |
|                                                                |                                                     | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA | NA             | NA              |         |
| SPEC: +/-1.0% SPAN                                             |                                                     |                                            |                    |                    |                    |    |                |                 |         |
| DEMO: +/-0.3% SPAN                                             |                                                     |                                            |                    |                    |                    |    |                |                 |         |
| ZONE NO.:                                                      | SC196113                                            |                                            |                    |                    |                    |    |                |                 |         |
| SUBMERGENCE:                                                   | NA                                                  |                                            |                    |                    |                    |    |                |                 |         |
| SPRAY:                                                         | NA                                                  |                                            |                    |                    |                    |    |                |                 |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY.              |                                                     |                                            |                    |                    |                    |    |                |                 |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                                     |                                            |                    |                    |                    |    |                |                 |         |
| MAINT/SURVEILL - - -                                           |                                                     |                                            |                    |                    |                    |    |                |                 |         |
| REFERENCE: 2                                                   |                                                     |                                            |                    |                    |                    |    |                |                 |         |
| QUALIFIED LIFE - - -                                           |                                                     |                                            |                    |                    |                    |    |                |                 |         |
| (YEARS): 10                                                    |                                                     |                                            |                    |                    |                    |    |                |                 |         |
| REFERENCE: 2                                                   |                                                     |                                            |                    |                    |                    |    |                |                 |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.                  |                                                     |                                            |                    |                    |                    |    |                |                 |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS  
MAX DESIGN/AVERAGE.



QUAL REF # C071AAR REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION                            |                              | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |                                                                                                                                           |                |                |         |
|--------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------|
|                                                  |                              | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                                                                           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
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| EQUIP NO.:                                       | 2HVR*TIS25D                  | OP.TIME:                                                                                     | 100 DAYS           | >100 DAYS          | 3                  | 2                                                                                                                                         | TEST-SIM       | YES            |         |
| SPEC NO.:                                        | C071A                        | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                          | REACTOR BUILDING VENTILATION | NORMAL                                                                                       | 104/85             | 120                | 1                  | 2                                                                                                                                         | TEST-SIM       | NA             | NOTE 2  |
|                                                  |                              | ABNORMAL                                                                                     | 92                 | 120                | 1                  | 2                                                                                                                                         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                              |                              | ACCIDENT                                                                                     | 190 [R2]           | 255                | 1                  | 2                                                                                                                                         | TEST-SIM       | YES            |         |
| TEMPERATURE SWITCH                               |                              | PRESS (PSIG)                                                                                 | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                   | - - - -        | - - - -        | NOTE 1  |
|                                                  |                              | NORMAL                                                                                       | -.25"WG            | ATMOS              | 1                  | 2                                                                                                                                         | TEST-SIM       | NA             |         |
|                                                  |                              | ABNORMAL                                                                                     | -.25"WG            | ATMOS              | 1                  | 2                                                                                                                                         | TEST-SIM       | NA             |         |
| MANUFACTURER: UNITED ELECTRIC                    |                              | ACCIDENT                                                                                     | 2.8                | 18                 | 1                  | 2                                                                                                                                         | TEST-SIM       | YES            |         |
|                                                  |                              | RH (%):                                                                                      | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                                       | 802P-5AS                     | NORMAL                                                                                       | 50                 | 59                 | 1                  | 2                                                                                                                                         | TEST-SIM       | NA             |         |
|                                                  |                              | ABNORMAL                                                                                     | 50                 | 59                 | 1                  | 2                                                                                                                                         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                           |                              | ACCIDENT                                                                                     | 100                | 100                | 1                  | 2                                                                                                                                         | TEST-SIM       | NA             |         |
| START UNIT COOLER UPON REACHING HIGH TEMPERATURE |                              | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                   | - - - -        | - - - -        | NOTE 1  |
|                                                  |                              | NORM GAMMA                                                                                   |                    |                    |                    |                                                                                                                                           |                |                |         |
|                                                  |                              | ACC GAMMA                                                                                    | 2.73E6             | 1E7                | 4                  | 2                                                                                                                                         | TEST-SIM       | YES            | NOTE 3  |
| OP. CODE: A                                      |                              | NORM BETA                                                                                    |                    |                    |                    |                                                                                                                                           |                |                |         |
|                                                  |                              | ACC BETA                                                                                     |                    |                    |                    |                                                                                                                                           |                |                |         |
|                                                  |                              | NEUTRON                                                                                      |                    |                    |                    |                                                                                                                                           |                |                |         |
|                                                  |                              | SPRAY                                                                                        | NA                 | NA                 | NA                 | NA                                                                                                                                        | NA             | NA             |         |
| ACCURACY - -                                     |                              | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA                                                                                                                                        | NA             | NA             |         |
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| SPEC: +/-1.0% SPAN                               |                              |                                                                                              |                    |                    |                    |                                                                                                                                           |                |                |         |
| DEMO: +/-0.3% SPAN                               |                              |                                                                                              |                    |                    |                    |                                                                                                                                           |                |                |         |
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| ZONE NO.:                                        | SC196116                     | DOCUMENT REFERENCE:                                                                          |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                              |                |                |         |
| SUBMERGENCE:                                     | NA                           | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                    |                |                |         |
| SPRAY:                                           | NA                           | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A                       |                    |                    |                    | 3.COMBINED RADIATION FOR GAMMA AND BETA FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION IS 2.73E6 RADDS. |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.   |                              | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3                                   |                    |                    |                    |                                                                                                                                           |                |                |         |
|                                                  |                              | 4. CALCULATION NO. 12177-EQS-50                                                              |                    |                    |                    |                                                                                                                                           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                     |                              |                                                                                              |                    |                    |                    |                                                                                                                                           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I                   |                              |                                                                                              |                    |                    |                    |                                                                                                                                           |                |                |         |
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| MAINT/SURVEILL - - -                             |                              |                                                                                              |                    |                    |                    |                                                                                                                                           |                |                |         |
| REFERENCE: 2                                     |                              |                                                                                              |                    |                    |                    |                                                                                                                                           |                |                |         |
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| QUALIFIED LIFE - - -                             |                              |                                                                                              |                    |                    |                    |                                                                                                                                           |                |                |         |
| (YEARS): 10                                      |                              |                                                                                              |                    |                    |                    |                                                                                                                                           |                |                |         |
| REFERENCE: 2                                     |                              |                                                                                              |                    |                    |                    |                                                                                                                                           |                |                |         |
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## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                              | PARAMETER   | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|--------------------------------|------------------------------|-------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |                              |             |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                     | 2HVR*TIS26A                  | OP.TIME:    | 100 DAYS        | >100 DAYS       | 3                  | 2         | TEST-SIM    | YES         |         |
| SPEC NO.:                      | C071A                        | TEMP (F):   |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                        | REACTOR BUILDING VENTILATION | NORMAL      | 104/93          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                |                              | ABNORMAL    | 106             | 120             | 1                  | 2         | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)            |                              | ACCIDENT    | 200             | 255             | 1                  | 2         | TEST-SIM    | YES         |         |
| TEMPERATURE SWITCH             |                              | PRESS(PSIG) |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                              | NORMAL      | -.25"WG         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |                              | ABNORMAL    | -.25"WG         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: UNITED ELECTRIC  |                              | ACCIDENT    | 2.8             | 18              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                |                              | RH (%):     |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                     | 802P-5AS                     | NORMAL      | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |                              | ABNORMAL    | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -         |                              | ACCIDENT    | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| START UNIT COOLER UPON         |                              | RADIATION:  |                 |                 |                    |           |             |             | NOTE 1  |
| REACHING HIGH TEMPERATURE      |                              | NORM GAMMA  | 2E6             |                 | 4                  |           |             | NA          |         |
|                                |                              | ACC GAMMA   | 1E6             | 1E7             | 4                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE: A                    |                              | NORM BETA   | NA              |                 | 4                  |           |             | NA          |         |
|                                |                              | ACC BETA    | 6.1E6           |                 | 4                  |           |             | YES         |         |
|                                |                              | NEUTRON     | NA              |                 | 4                  |           |             | NA          |         |
|                                |                              | SPRAY       | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ACCURACY - -                   |                              | SUBMERGENCE | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: +/-1.0% SPAN             |                              |             |                 |                 |                    |           |             |             |         |
| DEMO: +/-0.3% SPAN             |                              |             |                 |                 |                    |           |             |             |         |
| ZONE NO.:                      | SC215122                     |             |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                   | NA                           |             |                 |                 |                    |           |             |             |         |
| SPRAY:                         | NA                           |             |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |                              |             |                 |                 |                    |           |             |             |         |
| SUBMERGENCE OR SPRAY.          |                              |             |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                              |             |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                              |             |                 |                 |                    |           |             |             |         |
|                                |                              |             |                 |                 |                    |           |             |             |         |
|                                |                              |             |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |                              |             |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |                              |             |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |                              |             |                 |                 |                    |           |             |             |         |
| (YEARS): 10                    |                              |             |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |                              |             |                 |                 |                    |           |             |             |         |
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09-Feb-86

| EQUIPMENT DESCRIPTION                                       |                              | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-------------------------------------------------------------|------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                             |                              | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                             |                              |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                  | 2HVR*TIS26B                  |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.:                                                   | C071A                        | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            |         |
| SYSTEM:                                                     | REACTOR BUILDING VENTILATION | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                             |                              | NORMAL                                     | 104/93             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                                             |                              | ABNORMAL                                   | 106                | 120                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                         |                              | ACCIDENT                                   | 200                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
| TEMPERATURE SWITCH                                          |                              | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                             |                              | NORMAL                                     | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                             |                              | ABNORMAL                                   | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: UNITED ELECTRIC                               |                              | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                             |                              | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                                                  | 802P-5AS                     | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                             |                              | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                                      |                              | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| START UNIT COOLER UPON REACHING HIGH TEMPERATURE            |                              | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                             |                              | NORM GAMMA                                 |                    |                    |                    |           |                |                |         |
|                                                             |                              | ACC GAMMA                                  | 5.51E6             | 1E7                | 4                  | 2         | TEST-SIM       | YES            | NOTE 3  |
| OP. CODE: A                                                 |                              | NORM BETA                                  |                    |                    |                    |           |                |                |         |
|                                                             |                              | ACC BETA                                   |                    |                    |                    |           |                |                |         |
|                                                             |                              | NEUTRON                                    |                    |                    |                    |           |                |                |         |
|                                                             |                              | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                                                |                              | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/-1.0% SPAN                                          |                              |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/-0.3% SPAN                                          |                              |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                   | SC215122                     |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                | NA                           |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                      | NA                           |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.              |                              |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                              |                                            |                    |                    |                    |           |                |                |         |
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| MAINT/SURVEILL - - -                                        |                              |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                                |                              |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                        |                              |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 10                                                 |                              |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                                |                              |                                            |                    |                    |                    |           |                |                |         |
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|                                                             |                              |                                            |                    |                    |                    |           |                |                |         |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                                   | PARAMETER                                                                                    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE                                                           |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------|-----------------|------------------------------------------------------------------------------|-----------|-------------|-------------|---------|
|                                                                         |                                                                                              |                 |                 | SPECIFIED                                                                    | QUALIFIED |             |             |         |
| EQUIP NO.: 2HVR*TIS26C                                                  | OP.TIME:                                                                                     | 100 DAYS        | >100 DAYS       | 3                                                                            | 2         | TEST-SIM    | YES         |         |
| SPEC NO.: C071A                                                         | TEMP (F):                                                                                    | - - - - -       | - - - - -       | - - - - -                                                                    | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
| SYSTEM: REACTOR BUILDING VENTILATION                                    | NORMAL                                                                                       | 104/93          | 120             | 1                                                                            | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                                                         | ABNORMAL                                                                                     | 106             | 120             | 1                                                                            | 2         | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION) TEMPERATURE SWITCH                                  | ACCIDENT                                                                                     | 200             | 255             | 1                                                                            | 2         | TEST-SIM    | YES         |         |
|                                                                         | PRESS(PSIG)                                                                                  | - - - - -       | - - - - -       | - - - - -                                                                    | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
|                                                                         | NORMAL                                                                                       | -.25"WG         | ATMOS           | 1                                                                            | 2         | TEST-SIM    | NA          |         |
|                                                                         | ABNORMAL                                                                                     | -.25"WG         | ATMOS           | 1                                                                            | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: UNITED ELECTRIC                                           | ACCIDENT                                                                                     | 2.8             | 18              | 1                                                                            | 2         | TEST-SIM    | YES         |         |
|                                                                         | RH (%):                                                                                      | - - - - -       | - - - - -       | - - - - -                                                                    | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
| MODEL NO.: 802P-5AS                                                     | NORMAL                                                                                       | 50              | 59              | 1                                                                            | 2         | TEST-SIM    | NA          |         |
|                                                                         | ABNORMAL                                                                                     | 50              | 59              | 1                                                                            | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - - START UNIT COOLER UPON REACHING HIGH TEMPERATURE | ACCIDENT                                                                                     | 100             | 100             | 1                                                                            | 2         | TEST-SIM    | NA          |         |
|                                                                         | RADIATION:                                                                                   | - - - - -       | - - - - -       | - - - - -                                                                    | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
|                                                                         | NORM GAMMA                                                                                   | 2E6             |                 | 4                                                                            |           |             | NA          |         |
|                                                                         | ACC GAMMA                                                                                    | 1.3E6           | 1E7             | 4                                                                            | 2         | TEST-SIM    | YES         |         |
| OP. CODE: A                                                             | NORM BETA                                                                                    | NA              |                 | 4                                                                            |           |             | NA          |         |
|                                                                         | ACC BETA                                                                                     | 6.1E6           |                 | 4                                                                            |           |             | YES         |         |
|                                                                         | NEUTRON                                                                                      | NA              |                 | 4                                                                            |           |             | NA          |         |
|                                                                         | SPRAY                                                                                        | NA              | NA              | NA                                                                           | NA        | NA          | NA          |         |
| ACCURACY - - SPEC: +/-1.0% SPAN DEMO: +/-0.3% SPAN                      | SUBMERGENCE                                                                                  | NA              | NA              | NA                                                                           | NA        | NA          | NA          |         |
|                                                                         |                                                                                              |                 |                 |                                                                              |           |             |             |         |
| ZONE NO.: SC215122                                                      | DOCUMENT REFERENCE:                                                                          |                 |                 | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED. |           |             |             |         |
| SUBMERGENCE: NA                                                         | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                 |                 | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                       |           |             |             |         |
| SPRAY: NA                                                               | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A                       |                 |                 |                                                                              |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.                          | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3                                   |                 |                 |                                                                              |           |             |             |         |
|                                                                         | 4. CALCULATION NO. 12177-PR(C)-22-0                                                          |                 |                 |                                                                              |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I             |                                                                                              |                 |                 |                                                                              |           |             |             |         |
|                                                                         |                                                                                              |                 |                 |                                                                              |           |             |             |         |
| MAINT/SURVEILL - - - REFERENCE: 2                                       |                                                                                              |                 |                 |                                                                              |           |             |             |         |
| QUALIFIED LIFE - - - (YEARS): 10 REFERENCE: 2                           |                                                                                              |                 |                 |                                                                              |           |             |             |         |
|                                                                         |                                                                                              |                 |                 |                                                                              |           |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.                           |                                                                                              |                 |                 |                                                                              |           |             |             |         |



09-Feb-86

| EQUIPMENT DESCRIPTION                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|----------------------------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                                | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                                |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2HVR*TIS26D                                         | OP.TIME:                                   | 100 DAYS        | >100 DAYS       | 3                  | 2         | TEST-SIM    | YES         |         |
| SPEC NO.: C071A                                                | TEMP (F):                                  | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
| SYSTEM: REACTOR BUILDING VENTILATION                           | NORMAL                                     | 104/93          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                                                | ABNORMAL                                   | 106             | 120             | 1                  | 2         | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)                                            | ACCIDENT                                   | 200             | 255             | 1                  | 2         | TEST-SIM    | YES         |         |
| TEMPERATURE SWITCH                                             | PRESS(PSIG)                                | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
|                                                                | NORMAL                                     | -.25"WG         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                | ABNORMAL                                   | -.25"WG         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: UNITED ELECTRIC                                  | ACCIDENT                                   | 2.8             | 18              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                                | RH (%) :                                   | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
| MODEL NO.: 802P-5AS                                            | NORMAL                                     | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                | ABNORMAL                                   | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -                                         | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| START UNIT COOLER UPON<br>REACHING HIGH TEMPERATURE            | RADIATION:                                 | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
|                                                                | NORM GAMMA                                 | 2E6             |                 | 4                  |           |             | NA          |         |
|                                                                | ACC GAMMA                                  | 9.3E5           | 1E7             | 4                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE: A                                                    | NORM BETA                                  | NA              |                 | 4                  |           |             | NA          |         |
|                                                                | ACC BETA                                   | 6.1E6           |                 | 4                  |           |             | YES         |         |
|                                                                | NEUTRON                                    | NA              |                 | 4                  |           |             | NA          |         |
|                                                                | SPRAY                                      | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ACCURACY - -                                                   | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: +/-1.0% SPAN                                             |                                            |                 |                 |                    |           |             |             |         |
| DEMO: +/-0.3% SPAN                                             |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.: SC215122                                             |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE: NA                                                |                                            |                 |                 |                    |           |             |             |         |
| SPRAY: NA                                                      |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.                 |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -<br>(YEARS): 10<br>REFERENCE: 2            |                                            |                 |                 |                    |           |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.                  |                                            |                 |                 |                    |           |             |             |         |



| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------|------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |                  | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                  |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2HVR*TIS26E      |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.:                      | C071A            | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            |         |
| SYSTEM:                        | REACTOR BUILDING | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                                | VENTILATION      | NORMAL                                     | 104/93             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                |                  | ABNORMAL                                   | 106                | 120                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)            |                  | ACCIDENT                                   | 200                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
| TEMPERATURE SWITCH             |                  | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                |                  | NORMAL                                     | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |                  | ABNORMAL                                   | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: UNITED ELECTRIC  |                  | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                |                  | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                     | 802P-5AS         | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |                  | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -         |                  | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| START UNIT COOLER UPON         |                  | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| REACHING HIGH TEMPERATURE      |                  | NORM GAMMA                                 |                    |                    |                    |           |                |                |         |
|                                |                  | ACC GAMMA                                  | 3.91E6             | 1E7                | 4                  | 2         | TEST-SIM       | YES            | NOTE 3  |
| OP. CODE: A                    |                  | NORM BETA                                  |                    |                    |                    |           |                |                |         |
|                                |                  | ACC BETA                                   |                    |                    |                    |           |                |                |         |
|                                |                  | NEUTRON                                    |                    |                    |                    |           |                |                |         |
|                                |                  | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                   |                  | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/-1.0% SPAN             |                  |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/-0.3% SPAN             |                  |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | SC215122         |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA               |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                         | NA               |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY.          |                  |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                  |                                            |                    |                    |                    |           |                |                |         |
|                                |                  |                                            |                    |                    |                    |           |                |                |         |
|                                |                  |                                            |                    |                    |                    |           |                |                |         |
|                                |                  |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                  |                                            |                    |                    |                    |           |                |                |         |
|                                |                  |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                  |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 10                    |                  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                  |                                            |                    |                    |                    |           |                |                |         |
|                                |                  |                                            |                    |                    |                    |           |                |                |         |
|                                |                  |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3
- CALCULATION NO. 12177-EQS-50

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.COMBINED RADIATION FOR GAMMA AND BETA FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION IS 3.91E6 RADS.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]





09-Feb-86

| EQUIPMENT DESCRIPTION                                       |                                                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                  |                    |                    |                    |                                                                              |                |                |         |
|-------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|------------------------------------------------------------------------------|----------------|----------------|---------|
|                                                             |                                                  | PARAMETER                                                                                   | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                              | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                             |                                                  |                                                                                             |                    |                    | SPECIFIED          | QUALIFIED                                                                    |                |                |         |
| EQUIP NO.:                                                  | 2HVR*TIS27B                                      | OP. TIME:                                                                                   | 100 DAYS           | >100 DAYS          | 3                  | 2                                                                            | TEST-SIM       | YES            |         |
| SPEC NO.:                                                   | C071A                                            | TEMP (F):                                                                                   |                    |                    |                    |                                                                              |                |                |         |
| SYSTEM:                                                     | REACTOR BUILDING VENTILATION                     | NORMAL                                                                                      | 104/88             | 120                | 1                  | 2                                                                            | TEST-SIM       | NA             | NOTE 1  |
|                                                             |                                                  | ABNORMAL                                                                                    | 94                 | 120                | 1                  | 2                                                                            | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)                                         | TEMPERATURE SWITCH                               | ACCIDENT                                                                                    | 195 [R2]           | 255                | 1                  | 2                                                                            | TEST-SIM       | YES            |         |
|                                                             |                                                  | PRESS (PSIG)                                                                                |                    |                    |                    |                                                                              |                |                | NOTE 1  |
|                                                             |                                                  | NORMAL                                                                                      | -.25"WG            | ATMOS              | 1                  | 2                                                                            | TEST-SIM       | NA             |         |
|                                                             |                                                  | ABNORMAL                                                                                    | -.25"WG            | ATMOS              | 1                  | 2                                                                            | TEST-SIM       | NA             |         |
| MANUFACTURER:                                               | UNITED ELECTRIC                                  | ACCIDENT                                                                                    | 2.8                | 18                 | 1                  | 2                                                                            | TEST-SIM       | YES            |         |
|                                                             |                                                  | RH (%):                                                                                     |                    |                    |                    |                                                                              |                |                | NOTE 1  |
| MODEL NO.:                                                  | 802P-5AS                                         | NORMAL                                                                                      | 50                 | 59                 | 1                  | 2                                                                            | TEST-SIM       | NA             |         |
|                                                             |                                                  | ABNORMAL                                                                                    | 50                 | 59                 | 1                  | 2                                                                            | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                            | - - -                                            | ACCIDENT                                                                                    | 100                | 100                | 1                  | 2                                                                            | TEST-SIM       | NA             |         |
|                                                             | START UNIT COOLER UPON REACHING HIGH TEMPERATURE | RADIATION:                                                                                  |                    |                    |                    |                                                                              |                |                | NOTE 1  |
|                                                             |                                                  | NORM GAMMA                                                                                  | 5.1E5              |                    | 4                  |                                                                              |                | NA             |         |
|                                                             |                                                  | ACC GAMMA                                                                                   | 7.4E5              | 1E7                | 4                  | 2                                                                            | TEST-SIM       | YES            |         |
| OP. CODE:                                                   | A                                                | NORM BETA                                                                                   | NA                 |                    | 4                  |                                                                              |                | NA             |         |
|                                                             |                                                  | ACC BETA                                                                                    | 6.1E6              |                    | 4                  |                                                                              |                | YES            |         |
|                                                             |                                                  | NEUTRON                                                                                     | NA                 |                    | 4                  |                                                                              |                | NA             |         |
|                                                             |                                                  | SPRAY                                                                                       | NA                 | NA                 | NA                 | NA                                                                           | NA             | NA             |         |
| ACCURACY - -                                                |                                                  | SUBMERGENCE                                                                                 | NA                 | NA                 | NA                 | NA                                                                           | NA             | NA             |         |
|                                                             | SPEC: +/-1.0% SPAN                               |                                                                                             |                    |                    |                    |                                                                              |                |                |         |
|                                                             | DEMO: +/-0.3% SPAN                               |                                                                                             |                    |                    |                    |                                                                              |                |                |         |
| ZONE NO.:                                                   | SC240135                                         |                                                                                             |                    |                    |                    |                                                                              |                |                |         |
| SUBMERGENCE:                                                | NA                                               | DOCUMENT REFERENCE:                                                                         |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED. |                |                |         |
| SPRAY:                                                      | NA                                               | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1,REV 3, DEC 20, 1985. [R2] |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                       |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.              |                                                  | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A                      |                    |                    |                    |                                                                              |                |                |         |
|                                                             |                                                  | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3                                  |                    |                    |                    |                                                                              |                |                |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT 1 |                                                  | 4. CALCULATION NO. 12177-PR(C)-22-0                                                         |                    |                    |                    |                                                                              |                |                |         |
| MAINT/SURVEILL - - -                                        |                                                  |                                                                                             |                    |                    |                    |                                                                              |                |                |         |
| REFERENCE: 2                                                |                                                  |                                                                                             |                    |                    |                    |                                                                              |                |                |         |
| QUALIFIED LIFE - - -                                        |                                                  |                                                                                             |                    |                    |                    |                                                                              |                |                |         |
| (YEARS): 10                                                 |                                                  |                                                                                             |                    |                    |                    |                                                                              |                |                |         |
| REFERENCE: 2                                                |                                                  |                                                                                             |                    |                    |                    |                                                                              |                |                |         |
|                                                             |                                                  | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                               |                    |                    |                    |                                                                              |                |                |         |



QUAL REF #\_C071AAZ REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION           |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION    |                    |                    |                    |           |                |                |         |
|---------------------------------|------------------|-----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 |                  | PARAMETER                                     | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                  |                                               |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                      | 2HVR*TIS27C      | OP.TIME:                                      | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.:                       | C071A            | TEMP (F):                                     |                    |                    |                    |           |                |                |         |
| SYSTEM:                         | REACTOR BUILDING | NORMAL                                        | 104/88             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                 | VENTILATION      | ABNORMAL                                      | 94                 | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)             |                  | ACCIDENT                                      | 195 [R2]           | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
| TEMPERATURE SWITCH              |                  | PRESS (PSIG)                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                                 |                  | NORMAL                                        | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 |                  | ABNORMAL                                      | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                   | UNITED ELECTRIC  | ACCIDENT                                      | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
| MODEL NO.:                      | 802P-5AS         | RH (%):                                       |                    |                    |                    |           |                |                | NOTE 1  |
|                                 |                  | NORMAL                                        | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 |                  | ABNORMAL                                      | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                | - - -            | ACCIDENT                                      | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| START UNIT COOLER UPON          |                  | RADIATION:                                    |                    |                    |                    |           |                |                | NOTE 1  |
| REACHING HIGH TEMPERATURE       |                  | NORM GAMMA                                    | 5.1E5              |                    | 4                  |           |                | NA             |         |
|                                 |                  | ACC GAMMA                                     | 2.1E6              | 1E7                | 4                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                       | A                | NORM BETA                                     | NA                 |                    | 4                  |           |                | NA             |         |
|                                 |                  | ACC BETA                                      | 6.1E6              |                    | 4                  |           |                | YES            |         |
|                                 |                  | NEUTRON                                       | NA                 |                    | 4                  |           |                | NA             |         |
|                                 |                  | SPRAY                                         | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                    |                  | SUBMERGENCE                                   | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                           | +/-1.0% SPAN     |                                               |                    |                    |                    |           |                |                |         |
| DEMO:                           | +/-0.3% SPAN     |                                               |                    |                    |                    |           |                |                |         |
| ZONE NO.:                       | SC240135         |                                               |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                    | NA               |                                               |                    |                    |                    |           |                |                |         |
| SPRAY:                          | NA               |                                               |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                  |                                               |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY.           |                  |                                               |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                  |                                               |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                  |                                               |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |                  |                                               |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                  |                                               |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                  |                                               |                    |                    |                    |           |                |                |         |
| (YEARS): 10                     |                  |                                               |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                  |                                               |                    |                    |                    |           |                |                |         |
|                                 |                  | [R2] INDICATES CHANGES MADE IN THIS REVISION. |                    |                    |                    |           |                |                |         |

- DOCUMENT REFERENCE:
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
  2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A
  3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3
  4. CALCULATION NO. 12177-PR(C)-22-0

- NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



09-Feb-86

| EQUIPMENT DESCRIPTION                                          |                                                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|----------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                |                                                        | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                |                                                        |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                     | 2HVR*TIS28A                                            | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.:                                                      | C071A                                                  | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                                                        | REACTOR BUILDING VENTILATION                           | NORMAL                                     | 104/85             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                                |                                                        | ABNORMAL                                   | 87                 | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)                                            | TEMPERATURE SWITCH                                     | ACCIDENT                                   | 200                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                |                                                        | PRESS(PSIG)                                |                    |                    |                    |           |                |                |         |
|                                                                |                                                        | NORMAL                                     | - .25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                                |                                                        | ABNORMAL                                   | - .25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                                  | UNITED ELECTRIC                                        | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                |                                                        | RH (%) :                                   |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                                                     | 802P-5AS                                               | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |                                                        | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                               | -- -- START UNIT COOLER UPON REACHING HIGH TEMPERATURE | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                                |                                                        | RADIATION:                                 |                    |                    |                    |           |                |                |         |
|                                                                |                                                        | NORM GAMMA                                 |                    |                    |                    |           |                |                |         |
|                                                                |                                                        | ACC GAMMA                                  | 3.26E6             | 1E7                | 4                  | 2         | TEST-SIM       | YES            | NOTE 3  |
| OP. CODE:                                                      | A                                                      | NORM BETA                                  |                    |                    |                    |           |                |                |         |
|                                                                |                                                        | ACC BETA                                   |                    |                    |                    |           |                |                |         |
|                                                                |                                                        | NEUTRON                                    |                    |                    |                    |           |                |                |         |
|                                                                |                                                        | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY --                                                    |                                                        | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
|                                                                | SPEC: +/-1.0% SPAN                                     |                                            |                    |                    |                    |           |                |                |         |
|                                                                | DEMO: +/-0.3% SPAN                                     |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                      | SC261145                                               |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                   | NA                                                     |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                         | NA                                                     |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.                 |                                                        |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                                        |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL -- --<br>REFERENCE: 2                           |                                                        |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE -- --<br>(YEARS): 10<br>REFERENCE: 2            |                                                        |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.                  |                                                        |                                            |                    |                    |                    |           |                |                |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.COMBINED RADIATION FOR GAMMA AND BETA FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION IS 3.26E6 RADDS.



| PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2HVR*TIS28B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                    |                    |           |                |                |         |
| SPEC NO.: C071A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |         |
| SYSTEM: REACTOR BUILDING VENTILATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                    |                    |           |                |                |         |
| TYPE: (DESCRIPTION)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                    |                    |           |                |                |         |
| TEMPERATURE SWITCH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| MANUFACTURER: UNITED ELECTRIC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                    |                    |           |                |                |         |
| MODEL NO.: 802P-5AS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                    |                    |           |                |                |         |
| SAFETY FUNCTION: - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                    |                    |           |                |                |         |
| START UNIT COOLER UPON REACHING HIGH TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
| OP. CODE: A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    |                    |           |                |                |         |
| ACCURACY - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| SPEC: +/-1.0% SPAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| DEMO: +/-0.3% SPAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC261145                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588, CAT I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                    |                    |           |                |                |         |
| (YEARS): 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| <p>DOCUMENT REFERENCE:</p> <p>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]</p> <p>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A</p> <p>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3</p> <p>4. CALCULATION NO. 12177-EQS-50</p> <p>NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.</p> <p>3. COMBINED RADIATION FOR GAMMA AND BETA FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT INCLUDING APPLICABLE BETA REDUCTION IS 3.26E6 RADS.</p> |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                    |                    |           |                |                |         |





| EQUIPMENT DESCRIPTION                            |                              | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------------------------|------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                  |                              | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                  |                              |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                       | 2HVR*TIS28C                  |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.:                                        | C071A                        | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            |         |
| SYSTEM:                                          | REACTOR BUILDING VENTILATION | TEMP (F):                                  | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                                                  |                              | NORMAL                                     | 104/85             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                                  |                              | ABNORMAL                                   | 87                 | 120                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                              | TEMPERATURE SWITCH           | ACCIDENT                                   | 200                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                  |                              | PRESS(PSIG)                                | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                                                  |                              | NORMAL                                     | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                              | ABNORMAL                                   | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                    | UNITED ELECTRIC              | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                  |                              | RH (%) :                                   | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
| MODEL NO.:                                       | 802P-5AS                     | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                              | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                           |                              | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| START UNIT COOLER UPON REACHING HIGH TEMPERATURE |                              | RADIATION:                                 | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                                                  |                              | NORM GAMMA                                 | 1E6                |                    | 4                  |           |                | NA             |         |
|                                                  |                              | ACC GAMMA                                  | 1.2E6              | 1E7                | 4                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                        | A                            | NORM BETA                                  | NA                 |                    | 4                  |           |                | NA             |         |
|                                                  |                              | ACC BETA                                   | 6.1E6              |                    | 4                  |           |                | YES            |         |
|                                                  |                              | NEUTRON                                    | NA                 |                    | 4                  |           |                | NA             |         |
|                                                  |                              | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                                     |                              | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                                            | +/-1.0% SPAN                 |                                            |                    |                    |                    |           |                |                |         |
| DEMO:                                            | +/-0.3% SPAN                 |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                        | SC261145                     |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                     | NA                           |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                           | NA                           |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.   |                              |                                            |                    |                    |                    |           |                |                |         |
|                                                  |                              |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                     |                              |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I                   |                              |                                            |                    |                    |                    |           |                |                |         |
|                                                  |                              |                                            |                    |                    |                    |           |                |                |         |
|                                                  |                              |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                             |                              |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                     |                              |                                            |                    |                    |                    |           |                |                |         |
|                                                  |                              |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                             |                              |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 10                                      |                              |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                     |                              |                                            |                    |                    |                    |           |                |                |         |
|                                                  |                              |                                            |                    |                    |                    |           |                |                |         |
|                                                  |                              |                                            |                    |                    |                    |           |                |                |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[R2] INDICATES CHANGES MADE IN THIS REVISION.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          |                                                     | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |             |
|----------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------|
|                                                                |                                                     | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS     |
|                                                                |                                                     |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |             |
| EQUIP NO.:                                                     | 2HVR*TIS30B                                         | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            |             |
| SPEC NO.:                                                      | C071A                                               | TEMP (F):                                  |                    |                    |                    |           |                |                |             |
| SYSTEM:                                                        | REACTOR BUILDING<br>VENTILATION                     | NORMAL                                     | 120/85 [R2]        | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1      |
|                                                                |                                                     | ABNORMAL                                   | 86                 | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2      |
| TYPE: (DESCRIPTION)                                            | TEMPERATURE SWITCH                                  | ACCIDENT                                   | 175                | 255                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3 [R2] |
|                                                                |                                                     | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1      |
|                                                                |                                                     | NORMAL                                     | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                                |                                                     | ABNORMAL                                   | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |             |
| MANUFACTURER:                                                  | UNITED ELECTRIC                                     | ACCIDENT                                   | 1.5 [R2]           | 18                 | 1                  | 2         | TEST-SIM       | YES            |             |
|                                                                |                                                     | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1      |
| MODEL NO.:                                                     | B02P-5AS                                            | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                                |                                                     | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |             |
| SAFETY FUNCTION:                                               | - - -                                               | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                                | START UNIT COOLER UPON<br>REACHING HIGH TEMPERATURE | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1      |
|                                                                |                                                     | NORM GAMMA                                 | 2.4E4              |                    | 4                  |           |                | NA             |             |
|                                                                |                                                     | ACC GAMMA                                  | 1.1E6              | 1E7                | 4                  | 2         | TEST-SIM       | YES            |             |
| OP. CODE:                                                      | A                                                   | NORM BETA                                  | NA                 |                    | 4                  |           |                | NA             |             |
|                                                                |                                                     | ACC BETA                                   | 6.1E6              |                    | 4                  |           |                | YES            |             |
|                                                                |                                                     | NEUTRON                                    | NA                 |                    | 4                  |           |                | NA             |             |
|                                                                |                                                     | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |             |
| ACCURACY - -                                                   |                                                     | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |             |
|                                                                | SPEC: +/-1.0% SPAN                                  |                                            |                    |                    |                    |           |                |                |             |
|                                                                | DEMO: +/-0.3% SPAN                                  |                                            |                    |                    |                    |           |                |                |             |
| ZONE NO.:                                                      | SC175106                                            |                                            |                    |                    |                    |           |                |                |             |
| SUBMERGENCE:                                                   | NA                                                  |                                            |                    |                    |                    |           |                |                |             |
| SPRAY:                                                         | NA                                                  |                                            |                    |                    |                    |           |                |                |             |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY.              |                                                     |                                            |                    |                    |                    |           |                |                |             |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                                     |                                            |                    |                    |                    |           |                |                |             |
|                                                                |                                                     |                                            |                    |                    |                    |           |                |                |             |
|                                                                |                                                     |                                            |                    |                    |                    |           |                |                |             |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |                                                     |                                            |                    |                    |                    |           |                |                |             |
| QUALIFIED LIFE - - -<br>(YEARS): 10<br>REFERENCE: 2            |                                                     |                                            |                    |                    |                    |           |                |                |             |
|                                                                |                                                     |                                            |                    |                    |                    |           |                |                |             |
|                                                                |                                                     |                                            |                    |                    |                    |           |                |                |             |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1,REV 3, DEC 20, 1985. [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3
- CALCULATION NO. 12177-PR(C)-22-0

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.UNIT COOLER IS NORMALLY OPERATED BY TEMPERATURE INDICATING SWITCH. THEREFORE SWITCH HAS SAME FUNCTION, WHICH IS EXEMPTED FROM RCIC HELB. [R2]

[R2] INDICATES CHANGES MADE IN THIS REVISION.



09-Feb-86

| EQUIPMENT DESCRIPTION                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|-------------------------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                             | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                             |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2HVR*TIS31A                                      | OP.TIME:                                   | 100 DAYS        | >100 DAYS       | 3                  | 2         | TEST-SIM    | YES         |         |
| SPEC NO.: C071A                                             | TEMP (F):                                  | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| SYSTEM: REACTOR BUILDING VENTILATION                        | NORMAL                                     | 104/95          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                                             | ABNORMAL                                   | 104 [R2]        | 120 [R2]        | 1                  | 2,5       | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)                                         | ACCIDENT                                   | 200 [R2]        | 255             | 1                  | 2         | TEST-SIM    | YES         |         |
| TEMPERATURE SWITCH                                          | PRESS(PSIG)                                | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                                             | NORMAL                                     | -.25"WG         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                             | ABNORMAL                                   | -.25"WG         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: UNITED ELECTRIC                               | ACCIDENT                                   | 2.8             | 18              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                             | RH (%):                                    | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1. |
| MODEL NO.: 802P-5AS                                         | NORMAL                                     | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                             | ABNORMAL                                   | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -                                      | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| SENSE INLET AIR TEMPERATURE FOR 2HVR*UC413A                 | RADIATION:                                 | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                                             | NORM GAMMA                                 | 1.8E6           |                 | 4                  |           |             | NA          |         |
|                                                             | ACC GAMMA                                  | 7.1E5           | 1E7             | 4                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE: A                                                 | NORM BETA                                  | NA              |                 | 4                  |           |             | NA          |         |
|                                                             | ACC BETA                                   | 6.1E6           |                 | 4                  |           |             | YES         |         |
|                                                             | NEUTRON                                    | NA              |                 | 4                  |           |             | NA          |         |
|                                                             | SPRAY                                      | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ACCURACY --                                                 | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: +/-1.0% SPAN                                          |                                            |                 |                 |                    |           |             |             |         |
| DEMO: +/-0.3% SPAN                                          |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.: SC289155                                          |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE: NA                                             |                                            |                 |                 |                    |           |             |             |         |
| SPRAY: NA                                                   |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.              |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                                            |                 |                 |                    |           |             |             |         |
|                                                             |                                            |                 |                 |                    |           |             |             |         |
|                                                             |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL --                                           |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                                |                                            |                 |                 |                    |           |             |             |         |
|                                                             |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE --                                           |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 9.45 [R2]                                          |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,5 [R2]                                         |                                            |                 |                 |                    |           |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.               |                                            |                 |                 |                    |           |             |             |         |





QUAL REF #\_C071ABG REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION                             |                                 | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------------------------|---------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                   |                                 | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                   |                                 |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                        | 2HVR*TIS31B                     | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.:                                         | C071A                           | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                                           | REACTOR BUILDING<br>VENTILATION | NORMAL                                     | 104/95             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                   |                                 | ABNORMAL                                   | 104 [R2]           | 120 [R2]           | 1                  | 2,5       | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)                               | TEMPERATURE SWITCH              | ACCIDENT                                   | 200 [R2]           | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                   |                                 | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                                   |                                 | NORMAL                                     | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                   |                                 | ABNORMAL                                   | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                     | UNITED ELECTRIC                 | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                   |                                 | RH (X):                                    |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                                        | 802P-5AS                        | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                   |                                 | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                  | - - -                           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SENSE INLET AIR TEMPERATURE<br>FOR 2HVR*UC413B    |                                 | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                   |                                 | NORM GAMMA                                 | 1.8E6              |                    | 4                  |           |                | NA             |         |
|                                                   |                                 | ACC GAMMA                                  | 9.7E5              | 1E7                | 4                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                         | A                               | NORM BETA                                  | NA                 |                    | 4                  |           |                | NA             |         |
|                                                   |                                 | ACC BETA                                   | 6.1E6              |                    | 4                  |           |                | YES            |         |
|                                                   |                                 | NEUTRON                                    | NA                 |                    | 4                  |           |                | NA             |         |
|                                                   |                                 | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                                      |                                 | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
|                                                   |                                 | SPEC:                                      | +/-1.0% SPAN       |                    |                    |           |                |                |         |
|                                                   |                                 | DEMO:                                      | +/-0.3% SPAN       |                    |                    |           |                |                |         |
| ZONE NO.:                                         | SC289155                        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                      | NA                              |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                            | NA                              |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY. |                                 |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                      |                                 |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I                   |                                 |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                              |                                 |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                      |                                 |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                              |                                 |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 9.45 [R2]                                |                                 |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,5 [R2]                               |                                 |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.     |                                 |                                            |                    |                    |                    |           |                |                |         |

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2. NORMAL TEMPERATURES ARE SHOWN AS  
MAX DESIGN/AVERAGE.

- DOCUMENT REFERENCE:
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN  
CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
  2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,  
SDDF # IEEE-07.144-5000A
  3. EQUIPMENT OPERABILITY TIME DATA SHEET:  
FILE NO. 22-1-C2
  4. CALCULATION NO. 12177-PR(C)-22-0
  5. CALCULATION NO. 12177-EQS-31



09-Feb-86

[illegible]



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                            |                              | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |                                                                              |                |                |         |
|--------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|------------------------------------------------------------------------------|----------------|----------------|---------|
|                                                  |                              | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                              | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                  |                              |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED                                                                    |                |                |         |
| EQUIP NO.:                                       | 2HVR*TIS35B                  | OP.TIME:                                                                                     | 100 DAYS           | >100 DAYS          | 3                  | 2                                                                            | TEST-SIM       | YES            |         |
| SPEC NO.:                                        | C071A                        | TEMP (F):                                                                                    |                    |                    |                    |                                                                              |                |                |         |
| SYSTEM:                                          | REACTOR BUILDING VENTILATION | NORMAL                                                                                       | 104/85             | 120                | 1                  | 2                                                                            | TEST-SIM       | NA             | NOTE 1  |
|                                                  |                              | ABNORMAL                                                                                     | 87                 | 120                | 1                  | 2                                                                            | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)                              | TEMPERATURE SWITCH           | ACCIDENT                                                                                     | 200                | 255                | 1                  | 2                                                                            | TEST-SIM       | YES            |         |
|                                                  |                              | PRESS(PSIG)                                                                                  |                    |                    |                    |                                                                              |                |                | NOTE 1  |
|                                                  |                              | NORMAL                                                                                       | -.25"WG            | ATMOS              | 1                  | 2                                                                            | TEST-SIM       | NA             |         |
|                                                  |                              | ABNORMAL                                                                                     | -.25"WG            | ATMOS              | 1                  | 2                                                                            | TEST-SIM       | NA             |         |
| MANUFACTURER:                                    | UNITED ELECTRIC              | ACCIDENT                                                                                     | 2.8                | 18                 | 1                  | 2                                                                            | TEST-SIM       | YES            |         |
|                                                  |                              | RH (%) :                                                                                     |                    |                    |                    |                                                                              |                |                | NOTE 1  |
| MODEL NO.:                                       | 802P-5AS                     | NORMAL                                                                                       | 50                 | 59                 | 1                  | 2                                                                            | TEST-SIM       | NA             |         |
|                                                  |                              | ABNORMAL                                                                                     | 50                 | 59                 | 1                  | 2                                                                            | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                                 | - - -                        | ACCIDENT                                                                                     | 100                | 100                | 1                  | 2                                                                            | TEST-SIM       | NA             |         |
| START UNIT COOLER UPON REACHING HIGH TEMPERATURE |                              | RADIATION:                                                                                   |                    |                    |                    |                                                                              |                |                | NOTE 1  |
|                                                  |                              | NORM GAMMA                                                                                   | 1E6                |                    | 4                  |                                                                              |                | NA             |         |
|                                                  |                              | ACC GAMMA                                                                                    | 9.7E5              | 1E7                | 4                  | 2                                                                            | TEST-SIM       | YES            |         |
| OP. CODE:                                        | A                            | NORM BETA                                                                                    | NA                 |                    | 4                  |                                                                              |                | NA             |         |
|                                                  |                              | ACC BETA                                                                                     | 6.1E6              |                    | 4                  |                                                                              |                | YES            |         |
|                                                  |                              | NEUTRON                                                                                      | NA                 |                    | 4                  |                                                                              |                | NA             |         |
|                                                  |                              | SPRAY                                                                                        | NA                 | NA                 | NA                 | NA                                                                           | NA             | NA             |         |
| ACCURACY - -                                     |                              | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA                                                                           | NA             | NA             |         |
| SPEC:                                            | +/-1.0% SPAN                 |                                                                                              |                    |                    |                    |                                                                              |                |                |         |
| DEMO:                                            | +/-0.3% SPAN                 |                                                                                              |                    |                    |                    |                                                                              |                |                |         |
| ZONE NO.:                                        | SC261145                     |                                                                                              |                    |                    |                    |                                                                              |                |                |         |
| SUBMERGENCE:                                     | NA                           | DOCUMENT REFERENCE:                                                                          |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED. |                |                |         |
| SPRAY:                                           | NA                           | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                       |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.   |                              | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A                       |                    |                    |                    |                                                                              |                |                |         |
|                                                  |                              | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3                                   |                    |                    |                    |                                                                              |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                     |                              | 4. CALCULATION NO. 12177-PR(C)-22-0                                                          |                    |                    |                    |                                                                              |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I                   |                              |                                                                                              |                    |                    |                    |                                                                              |                |                |         |
|                                                  |                              |                                                                                              |                    |                    |                    |                                                                              |                |                |         |
|                                                  |                              |                                                                                              |                    |                    |                    |                                                                              |                |                |         |
| MAINT/SURVEILL - - -                             |                              |                                                                                              |                    |                    |                    |                                                                              |                |                |         |
| REFERENCE: 2                                     |                              |                                                                                              |                    |                    |                    |                                                                              |                |                |         |
| QUALIFIED LIFE - - -                             |                              |                                                                                              |                    |                    |                    |                                                                              |                |                |         |
| (YEARS): 10                                      |                              |                                                                                              |                    |                    |                    |                                                                              |                |                |         |
| REFERENCE: 2                                     |                              |                                                                                              |                    |                    |                    |                                                                              |                |                |         |
|                                                  |                              |                                                                                              |                    |                    |                    |                                                                              |                |                |         |
|                                                  |                              | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |                                                                              |                |                |         |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                          |                                                  | PARAMETER    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS     |
|------------------------------------------------|--------------------------------------------------|--------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|-------------|
|                                                |                                                  |              |                 |                 | SPECIFIED          | QUALIFIED |             |             |             |
| EQUIP NO.:                                     | 2HVR*TIS38A                                      | OP. TIME:    | 100 DAYS        | >100 DAYS       | 3                  | 2         | TEST-SIM    | YES         |             |
| SPEC NO.:                                      | C071A                                            | TEMP (F):    |                 |                 |                    |           |             |             |             |
| SYSTEM:                                        | REACTOR BUILDING VENTILATION                     | NORMAL       | 104/87 [R2]     | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1      |
|                                                |                                                  | ABNORMAL     | NA [R2]         | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2      |
| TYPE: (DESCRIPTION)                            | TEMPERATURE SWITCH                               | ACCIDENT     | NA              | 255             | 1                  | 2         | TEST-SIM    | YES         |             |
|                                                |                                                  | PRESS (PSIG) |                 |                 |                    |           |             |             | NOTE 1      |
|                                                |                                                  | NORMAL       | ATMOS           | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |             |
|                                                |                                                  | ABNORMAL     | NA [R2]         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |             |
| MANUFACTURER:                                  | UNITED ELECTRIC                                  | ACCIDENT     | NA              | 18              | 1                  | 2         | TEST-SIM    | YES         |             |
|                                                |                                                  | RH (%):      |                 |                 |                    |           |             |             | NOTE 1      |
| MODEL NO.:                                     | 802P-5AS                                         | NORMAL       | 90 [R2]         | 59              | 1                  | 2         | TEST-SIM    | NA          | NOTE 3 [R2] |
|                                                |                                                  | ABNORMAL     | NA [R2]         | 59              | 1                  | 2         | TEST-SIM    | NA          |             |
| SAFETY FUNCTION:                               | - - -                                            | ACCIDENT     | NA              | 100             | 1                  | 2         | TEST-SIM    | NA          |             |
|                                                | START UNIT COOLER UPON REACHING HIGH TEMPERATURE | RADIATION:   |                 |                 |                    |           |             |             | NOTE 1      |
|                                                |                                                  | NORM GAMMA   | 2.6E3           |                 | 4                  |           |             | NA          |             |
|                                                |                                                  | ACC GAMMA    | 2.3E6           | 1E7             | 4                  | 2         | TEST-SIM    | YES         |             |
| OP. CODE:                                      | A                                                | NORM BETA    | NA              |                 | 4                  |           |             | NA          |             |
|                                                |                                                  | ACC BETA     | 1.1E2           |                 | 4                  |           |             | YES         |             |
|                                                |                                                  | NEUTRON      | NA              |                 | 4                  |           |             | NA          |             |
|                                                |                                                  | SPRAY        | NA              | NA              | NA                 | NA        | NA          | NA          |             |
|                                                |                                                  | SUBMERGENCE  | NA              | NA              | NA                 | NA        | NA          | NA          |             |
| ACCURACY - -                                   |                                                  |              |                 |                 |                    |           |             |             |             |
|                                                | SPEC: +/-1.0% SPAN                               |              |                 |                 |                    |           |             |             |             |
|                                                | DEMO: +/-0.3% SPAN                               |              |                 |                 |                    |           |             |             |             |
| ZONE NO.:                                      | SG261355                                         |              |                 |                 |                    |           |             |             |             |
| SUBMERGENCE:                                   | NA                                               |              |                 |                 |                    |           |             |             |             |
| SPRAY:                                         | NA                                               |              |                 |                 |                    |           |             |             |             |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY. |                                                  |              |                 |                 |                    |           |             |             |             |
| DOCUMENTATION ACCEPTABILITY:                   |                                                  |              |                 |                 |                    |           |             |             |             |
| ACCEPTABLE TO NUREG 0580, CAT I                |                                                  |              |                 |                 |                    |           |             |             |             |
| MAINT/SURVEILL - - -                           |                                                  |              |                 |                 |                    |           |             |             |             |
| REFERENCE: 2                                   |                                                  |              |                 |                 |                    |           |             |             |             |
| QUALIFIED LIFE - - -                           |                                                  |              |                 |                 |                    |           |             |             |             |
| (YEARS): 10                                    |                                                  |              |                 |                 |                    |           |             |             |             |
| REFERENCE: 2                                   |                                                  |              |                 |                 |                    |           |             |             |             |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.  |                                                  |              |                 |                 |                    |           |             |             |             |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                          |                                                  | PARAMETER    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS     |
|------------------------------------------------|--------------------------------------------------|--------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|-------------|
|                                                |                                                  |              |                 |                 | SPECIFIED          | QUALIFIED |             |             |             |
| EQUIP NO.:                                     | 2HVR*TIS38B                                      | OP. TIME:    | 100 DAYS        | >100 DAYS       | 3                  | 2         | TEST-SIM    | YES         |             |
| SPEC NO.:                                      | C071A                                            | TEMP (F):    |                 |                 |                    |           |             |             |             |
| SYSTEM:                                        | REACTOR BUILDING VENTILATION                     | NORMAL       | 104/88 [R2]     | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1      |
|                                                |                                                  | ABNORMAL     | NA [R2]         | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2      |
| TYPE: (DESCRIPTION)                            | TEMPERATURE SWITCH                               | ACCIDENT     | NA              | 255             | 1                  | 2         | TEST-SIM    | YES         |             |
|                                                |                                                  | PRESS (PSIG) |                 |                 |                    |           |             |             | NOTE 1      |
|                                                |                                                  | NORMAL       | ATMOS           | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |             |
|                                                |                                                  | ABNORMAL     | NA [R2]         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |             |
| MANUFACTURER:                                  | UNITED ELECTRIC                                  | ACCIDENT     | NA              | 18              | 1                  | 2         | TEST-SIM    | YES         |             |
|                                                |                                                  | RH (%):      |                 |                 |                    |           |             |             | NOTE 1      |
| MODEL NO.:                                     | 802P-5AS                                         | NORMAL       | 90 [R2]         | 59              | 1                  | 2         | TEST-SIM    | NA          | NOTE 3 [R2] |
|                                                |                                                  | ABNORMAL     | NA [R2]         | 59              | 1                  | 2         | TEST-SIM    | NA          |             |
| SAFETY FUNCTION:                               | - - -                                            | ACCIDENT     | NA              | 100             | 1                  | 2         | TEST-SIM    | NA          |             |
|                                                | START UNIT COOLER UPON REACHING HIGH TEMPERATURE | RADIATION:   |                 |                 |                    |           |             |             | NOTE 1      |
|                                                |                                                  | NORM GAMMA   | 2.6E3           |                 | 4                  |           |             | NA          |             |
|                                                |                                                  | ACC GAMMA    | 2.3E6           | 1E7             | 4                  | 2         | TEST-SIM    | YES         |             |
| OP. CODE:                                      | A                                                | NORM BETA    | NA              |                 | 4                  |           |             | NA          |             |
|                                                |                                                  | ACC BETA     | 1.1E2           |                 | 4                  |           |             | YES         |             |
|                                                |                                                  | NEUTRON      | NA              |                 | 4                  |           |             | NA          |             |
|                                                |                                                  | SPRAY        | NA              | NA              | NA                 | NA        | NA          | NA          |             |
|                                                |                                                  | SUBMERGENCE  | NA              | NA              | NA                 | NA        | NA          | NA          |             |
| ACCURACY - -                                   |                                                  |              |                 |                 |                    |           |             |             |             |
|                                                | SPEC: +/-1.0% SPAN                               |              |                 |                 |                    |           |             |             |             |
|                                                | DEMO: +/-0.3% SPAN                               |              |                 |                 |                    |           |             |             |             |
| ZONE NO.:                                      | SG261356                                         |              |                 |                 |                    |           |             |             |             |
| SUBMERGENCE:                                   | NA                                               |              |                 |                 |                    |           |             |             |             |
| SPRAY:                                         | NA                                               |              |                 |                 |                    |           |             |             |             |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY. |                                                  |              |                 |                 |                    |           |             |             |             |
| DOCUMENTATION ACCEPTABILITY:                   |                                                  |              |                 |                 |                    |           |             |             |             |
| ACCEPTABLE TO NUREG 0588, CAT I                |                                                  |              |                 |                 |                    |           |             |             |             |
| MAINT/SURVEILL - - -                           |                                                  |              |                 |                 |                    |           |             |             |             |
| REFERENCE: 2                                   |                                                  |              |                 |                 |                    |           |             |             |             |
| QUALIFIED LIFE - - -                           |                                                  |              |                 |                 |                    |           |             |             |             |
| (YEARS): 10                                    |                                                  |              |                 |                 |                    |           |             |             |             |
| REFERENCE: 2                                   |                                                  |              |                 |                 |                    |           |             |             |             |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.  |                                                  |              |                 |                 |                    |           |             |             |             |



QUAL REF # C071ABL REV 2

09-Feb-86

[illegible]



QUAL REF #\_C071ABM\_\_ REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION                          |                                                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|------------------------------------------------|--------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                |                                                  | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                |                                                  |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                     | 2HVR*TIS116                                      | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.:                                      | C071A                                            | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                                        | REACTOR BUILDING VENTILATION                     | NORMAL                                     | 120/87 [R2]        | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                |                                                  | ABNORMAL                                   | 104                | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)                            | TEMPERATURE SWITCH                               | ACCIDENT                                   | 175                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                |                                                  | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                                |                                                  | NORMAL                                     | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                |                                                  | ABNORMAL                                   | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                                  | UNITED ELECTRIC                                  | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
| MODEL NO.:                                     | 802P-SAS                                         | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
|                                                |                                                  | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                |                                                  | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION:                               | START UNIT COOLER UPON REACHING HIGH TEMPERATURE | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                |                                                  | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                |                                                  | NORM GAMMA                                 | 1.1E6              |                    | 4                  |           |                | NA             |         |
|                                                |                                                  | ACC GAMMA                                  | 2.2E6              | 1E7                | 4                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                      | A                                                | NORM BETA                                  | NA                 |                    | 4                  |           |                | NA             |         |
|                                                |                                                  | ACC BETA                                   | 6.1E6              |                    | 4                  |           |                | YES            |         |
|                                                |                                                  | NEUTRON                                    | NA                 |                    | 4                  |           |                | NA             |         |
|                                                |                                                  | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                                   |                                                  | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
|                                                | SPEC: +/-1.0% SPAN                               |                                            |                    |                    |                    |           |                |                |         |
|                                                | DEMO: +/-0.3% SPAN                               |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                      | ABN17505                                         |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                   | NA                                               |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                         | NA                                               |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY. |                                                  |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                   |                                                  |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I                |                                                  |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                           |                                                  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                   |                                                  |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                           |                                                  |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 10                                    |                                                  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                   |                                                  |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.  |                                                  |                                            |                    |                    |                    |           |                |                |         |

- DOCUMENT REFERENCE:
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
  2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE-07.144-5000A
  3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C3
  4. CALCULATION NO. 12177-PR(C)-22-0
- NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|--------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.: 2HVR*FE18A          | OP.TIME:                                        | 100 DAYS           | >100 DAYS          | 3                  | 2,5       | AN + DATA      | YES            | - NOTE 3                                        |
| SPEC NO.: C071A                | TEMP (F):                                       | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1                                        |
| SYSTEM:                        |                                                 |                    |                    |                    |           |                |                |                                                 |
| REACTOR BUILDING VENTILATION   | NORMAL                                          | 104/95             | 104                | 1                  | 2,4       | TEST-SIM       | NA             | - NOTE 2                                        |
|                                | ABNORMAL                                        | 119 [R2]           | 119 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             |                                                 |
| TYPE: (DESCRIPTION)            | ACCIDENT                                        | 175                | 340                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| FLOW ELEMENT                   | PRESS (PSIG)                                    | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1                                        |
|                                | NORMAL                                          | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                | ABNORMAL                                        | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| MANUFACTURER:                  | ACCIDENT                                        | 2.8                | 43                 | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| FLUID COMPONENTS INC.          | IRH (%)                                         | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1                                        |
| MODEL NO.: FR-72-4             | NORMAL                                          | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                | ABNORMAL                                        | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| SAFETY FUNCTION: - - -         | ACCIDENT                                        | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| SENSE DISCHARGE AIR FLOW AND   | RADIATION:                                      | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1                                        |
| INLET AIR TEMP FOR             | NORM GAMMA                                      | 1.8E6              |                    | 1                  |           |                | NA             |                                                 |
| 2HVR*UC413A & B                | ACC GAMMA                                       | 9.7E5 [R2]         | 1E8                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| OP. CODE: A                    | NORM BETA                                       | NA                 |                    | 1                  |           |                | NA             |                                                 |
|                                | ACC BETA                                        | 6.1E6              |                    | 1                  |           |                | YES            |                                                 |
|                                | NEUTRON                                         | NA                 |                    | 1                  |           |                | NA             |                                                 |
|                                | SPRAY                                           | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| ACCURACY - -                   | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| SPEC: NA                       |                                                 |                    |                    |                    |           |                |                |                                                 |
| DEMO: NA                       |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.: SC289155             |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE: NA                | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY: NA                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
| EQUIPMENT NOT SUBJECT TO       | CRITERIA, EQEDC-1,REV 3, DEC 20, 1985. [R2]     |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS              |
| SUBMERGENCE OR SPRAY.          | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | MAX DESIGN/AVERAGE.                             |
|                                | SDDF # IEEE 07.114-5000E                        |                    |                    |                    |           |                |                | 3.OPERABILITY PERIOD EXTENDED FROM 100          |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                | HOURS TESTED VALUE TO 100 DAYS PLUS             |
|                                | FILE NO. 22-1-C2                                |                    |                    |                    |           |                |                | MARGIN BY ANALYSIS. SEE REF 5.                  |
| DOCUMENTATION ACCEPTABILITY:   | 4. CALCULATION NO. 12177-EQS-31                 |                    |                    |                    |           |                |                |                                                 |
| ACCEPTABLE TO NUREG 0588,CAT I | 5. CALCULATION NO. 12177-EQS-32                 |                    |                    |                    |           |                |                |                                                 |
|                                |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                                                 |                    |                    |                    |           |                |                |                                                 |
| MAINT/SURVEILL - - -           |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                   |                                                 |                    |                    |                    |           |                |                |                                                 |
| QUALIFIED LIFE - - -           |                                                 |                    |                    |                    |           |                |                |                                                 |
| (YEARS): 37 YEARS [R2]         |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 4                   |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                |                                                 |





QUAL REF # C071AB0 REV 2

. 09-Feb-86

| EQUIPMENT DESCRIPTION                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                 |          |
|-----------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|----------|
|                                               | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS  |
|                                               |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                 |          |
| EQUIP NO.: 2HVR*FE18B                         | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2,5       | AN + DATA      | YES             | - NOTE 3 |
| I SPEC NO.: C071A                             | TEMP (F):                                  | -- -- --           | -- -- --           | -- -- --           | -- -- --  | -- -- --       | -- -- --        | - NOTE 1 |
| I SYSTEM:                                     | NORMAL                                     | 104/95             | 104                | 1                  | 2,4       | TEST-SIM       | NA              | - NOTE 2 |
| I REACTOR BUILDING VENTILATION                | ABNORMAL                                   | 119 [R2]           | 119 [R2]           | 1                  | 2,4       | TEST-SIM       | NA              |          |
| I TYPE: (DESCRIPTION)                         | ACCIDENT                                   | 175                | 340                | 1                  | 2         | TEST-SIM       | YES             |          |
| I FLOW ELEMENT                                | PRESS (PSIG)                               | -- -- --           | -- -- --           | -- -- --           | -- -- --  | -- -- --       | -- -- --        | - NOTE 1 |
|                                               | NORMAL                                     | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA              |          |
|                                               | ABNORMAL                                   | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA              |          |
| I MANUFACTURER:                               | ACCIDENT                                   | 2.8                | 43                 | 1                  | 2         | TEST-SIM       | YES             |          |
| I FLUID COMPONENTS INC.                       | RH (%):                                    | -- -- --           | -- -- --           | -- -- --           | -- -- --  | -- -- --       | -- -- --        | - NOTE 1 |
| I MODEL NO.: FR-72-4                          | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA              |          |
|                                               | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA              |          |
| I SAFETY FUNCTION: - - -                      | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA              |          |
| I SENSE DISCHARGE AIR FLOW AND                | RADIATION:                                 | -- -- --           | -- -- --           | -- -- --           | -- -- --  | -- -- --       | -- -- --        | - NOTE 1 |
| I INLET AIR TEMP FOR                          | NORM GAMMA                                 | 1.8E6              |                    | 1                  |           |                | NA              |          |
| I 2HVR*UC413A & B                             | ACC GAMMA                                  | 9.7E5 [R2]         | 1E8                | 1                  | 2         | TEST-SIM       | YES             |          |
| I OP. CODE: A                                 | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA              |          |
|                                               | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES             |          |
|                                               | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA              |          |
|                                               | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA              |          |
| I ACCURACY - -                                | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA              |          |
|                                               | SPEC: NA                                   |                    |                    |                    |           |                |                 |          |
|                                               | DEMO: NA                                   |                    |                    |                    |           |                |                 |          |
| I ZONE NO.: SC289155                          |                                            |                    |                    |                    |           |                |                 |          |
| I SUBMERGENCE: NA                             |                                            |                    |                    |                    |           |                |                 |          |
| I SPRAY: NA                                   |                                            |                    |                    |                    |           |                |                 |          |
| I EQUIPMENT NOT SUBJECT TO                    |                                            |                    |                    |                    |           |                |                 |          |
| I SUBMERGENCE OR SPRAY                        |                                            |                    |                    |                    |           |                |                 |          |
|                                               |                                            |                    |                    |                    |           |                |                 |          |
| I DOCUMENTATION ACCEPTABILITY:                |                                            |                    |                    |                    |           |                |                 |          |
| I ACCEPTABLE TO NUREG 0588,CAT I              |                                            |                    |                    |                    |           |                |                 |          |
|                                               |                                            |                    |                    |                    |           |                |                 |          |
|                                               |                                            |                    |                    |                    |           |                |                 |          |
|                                               |                                            |                    |                    |                    |           |                |                 |          |
| I MAINT/SURVEILL - - -                        |                                            |                    |                    |                    |           |                |                 |          |
| I REFERENCE: 2                                |                                            |                    |                    |                    |           |                |                 |          |
|                                               |                                            |                    |                    |                    |           |                |                 |          |
| I QUALIFIED LIFE - - -                        |                                            |                    |                    |                    |           |                |                 |          |
| (YEARS): 37 YEARS [R2]                        |                                            |                    |                    |                    |           |                |                 |          |
| I REFERENCE: 4                                |                                            |                    |                    |                    |           |                |                 |          |
|                                               |                                            |                    |                    |                    |           |                |                 |          |
|                                               |                                            |                    |                    |                    |           |                |                 |          |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                                            |                    |                    |                    |           |                |                 |          |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS  
MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 100  
HOURS TESTED VALUE TO 100 DAYS PLUS  
MARGIN BY ANALYSIS. SEE REF 5.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



QUAL REF # C071ABQ REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|--------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.: 2HVR*FE18D          |                                                 |                    |                    |                    |           |                |                |                                                 |
| SPEC NO.: C071A                | OP. TIME:                                       | 100 DAYS           | >100 DAYS          | 3                  | 2,5       | AN + DATA      | YES            | NOTE 3                                          |
| SYSTEM:                        | TEMP (F):                                       |                    |                    |                    |           |                |                | NOTE 1                                          |
| REACTOR BUILDING VENTILATION   | NORMAL                                          | 104/95             | 104                | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2                                          |
| TYPE: (DESCRIPTION)            | ABNORMAL                                        | 119 [R2]           | 119 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             |                                                 |
| FLOW ELEMENT                   | ACCIDENT                                        | 175                | 340                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
|                                | PRESS (PSIG)                                    |                    |                    |                    |           |                |                | NOTE 1                                          |
|                                | NORMAL                                          | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                | ABNORMAL                                        | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| MANUFACTURER:                  | ACCIDENT                                        | 2.8                | 43                 | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| FLUID COMPONENTS INC.          | RH (%)                                          |                    |                    |                    |           |                |                | NOTE 1                                          |
| MODEL NO.: FR-72-4             | NORMAL                                          | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                | ABNORMAL                                        | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| SAFETY FUNCTION: - - -         | ACCIDENT                                        | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| SENSE DISCHARGE AIR FLOW AND   | RADIATION:                                      |                    |                    |                    |           |                |                | NOTE 1                                          |
| INLET AIR TEMP FOR             | NORM GAMMA                                      | 1.8E6              |                    | 1                  |           |                | NA             |                                                 |
| 2HVR*UC413A & B                | ACC GAMMA                                       | 9.7E5 [R2]         | 1E8                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| OP. CODE: A                    | NORM BETA                                       | NA                 |                    | 1                  |           |                | NA             |                                                 |
|                                | ACC BETA                                        | 6.1E6              |                    | 1                  |           |                | YES            |                                                 |
|                                | NEUTRON                                         | NA                 |                    | 1                  |           |                | NA             |                                                 |
|                                | SPRAY                                           | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| ACCURACY - -                   | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| SPEC: NA                       |                                                 |                    |                    |                    |           |                |                |                                                 |
| DEMO: NA                       |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.: SC289155             |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE: NA                | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY: NA                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
| EQUIPMENT NOT SUBJECT TO       | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS              |
| SUBMERGENCE OR SPRAY.          | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | MAX DESIGN/AVERAGE.                             |
|                                | SDDF # IEEE 07.114-5000E                        |                    |                    |                    |           |                |                | 3.OPERABILITY PERIOD EXTENDED FROM 100          |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                | HOURS TESTED VALUE TO 100 DAYS PLUS             |
|                                | FILE NO. 22-1-C2                                |                    |                    |                    |           |                |                | MARGIN BY ANALYSIS; SEE REF 5.                  |
| DOCUMENTATION ACCEPTABILITY:   | 4. CALCULATION NO. 12177-EQS-31                 |                    |                    |                    |           |                |                |                                                 |
| ACCEPTABLE TO NUREG 0588,CAT I | 5. CALCULATION NO. 12177-EQS-32                 |                    |                    |                    |           |                |                |                                                 |
|                                |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                                                 |                    |                    |                    |           |                |                |                                                 |
| MAINT/SURVEILL - - -           |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                   |                                                 |                    |                    |                    |           |                |                |                                                 |
| QUALIFIED LIFE - - -           |                                                 |                    |                    |                    |           |                |                |                                                 |
| (YEARS): 37 YEARS [R2]         |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 4                   |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                |                                                 |



QUAL REF #\_C071ABR\_ REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                               | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2HVR*FE36A                         | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 100 DAYS           | 100 DAYS           | 3                  | 2,5       | AN + DATA      | YES            | NOTE 3  |
| SPEC NO.: C071A                               | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: REACTOR BUILDING VENTILATION          | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 104/85 [R2]        | 104                | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)                           | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 79                 | 119 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             |         |
| FLOW ELEMENT                                  | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 175                | 340                | 1                  | 2         | TEST-SIM       | YES            |         |
| MANUFACTURER:                                 | PRESS (PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| FLUID COMPONENTS INC.                         | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MODEL NO.: FR-72-4                            | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                        | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | .25                | 43                 | 1                  | 2         | TEST-SIM       | YES            |         |
| SENSE AIR FLOW THROUGH NORMAL                 | RH (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| VENTILATION EXHAUST ABOVE AND                 | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| BELOW REFUELING FLOOR                         | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| OP. CODE: A                                   | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                                  | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SPEC: NA                                      | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7E5                | .                  | 1                  |           |                | NA             |         |
| DEMO: NA                                      | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5.0E5              | 1E8                | 1                  | 2         | TEST-SIM       | YES            |         |
| ZONE NO.: SC353202                            | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                 |                    | 1                  |           |                | NA             |         |
| SUBMERGENCE: NA                               | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6.1E6              |                    | 1                  |           |                | YES            |         |
| SPRAY: NA                                     | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NA                 |                    | 1                  |           |                | NA             |         |
| EQUIPMENT NOT SUBJECT TO                      | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SUBMERGENCE OR SPRAY.                         | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| DOCUMENTATION ACCEPTABILITY:                  | <p>DOCUMENT REFERENCE:</p> <p>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]</p> <p>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.114-5000E</p> <p>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C1</p> <p>4. CALCULATION NO. 12177-EQS-31</p> <p>5. CALCULATION NO. 12177-EQS-32</p> <p>NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.</p> <p>3. OPERABILITY PERIOD EXTENDED FROM 100 HOURS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS. SEE REF 5.</p> |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT 1               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
| (YEARS): 40 YEARS [R2]                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
| REFERENCE: 4                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |





| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                            |
|---------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|------------------------------------------------------------------------------------------------------------|
|                                 | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                    |
|                                 |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                            |
| EQUIP NO.: 2HVR*FE36B           |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
| SPEC NO.: C071A                 | OP. TIME:                                                                                    | 100 DAYS           | >100 DAYS          | 3                  | 2, 5      | AN + DATA      | YES            | - NOTE 3                                                                                                   |
| SYSTEM:                         | TEMP (F):                                                                                    | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1                                                                                                   |
| REACTOR BUILDING VENTILATION    | NORMAL                                                                                       | 104/85 [R2]        | 104                | 1                  | 2, 4      | TEST-SIM       | NA             | - NOTE 2                                                                                                   |
|                                 | ABNORMAL                                                                                     | 79                 | 119 [R2]           | 1                  | 2, 4      | TEST-SIM       | NA             |                                                                                                            |
| TYPE: (DESCRIPTION)             | ACCIDENT                                                                                     | 175                | 340                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                            |
| FLOW ELEMENT                    | PRESS (PSIG)                                                                                 | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1                                                                                                   |
|                                 | NORMAL                                                                                       | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                            |
|                                 | ABNORMAL                                                                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                            |
| MANUFACTURER:                   | ACCIDENT                                                                                     | .25                | 43                 | 1                  | 2         | TEST-SIM       | YES            |                                                                                                            |
| FLUID COMPONENTS INC.           | RH (%):                                                                                      | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1                                                                                                   |
| MODEL NO.: FR-72-4              | NORMAL                                                                                       | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                            |
|                                 | ABNORMAL                                                                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                            |
| SAFETY FUNCTION: - - -          | ACCIDENT                                                                                     | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                            |
| SENSE AIR FLOW THROUGH NORMAL   | RADIATION:                                                                                   | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1                                                                                                   |
| VENTILATION EXHAUST ABOVE AND   | NORM GAMMA                                                                                   | 7E5                |                    | 1                  |           |                | NA             |                                                                                                            |
| BELOW REFUELING FLOOR           | ACC GAMMA                                                                                    | 5.0E5              | 1E8                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                            |
| OP. CODE: A                     | NORM BETA                                                                                    | NA                 |                    | 1                  |           |                | NA             |                                                                                                            |
|                                 | ACC BETA                                                                                     | 6.1E6              |                    | 1                  |           |                | YES            |                                                                                                            |
|                                 | NEUTRON                                                                                      | NA                 |                    | 1                  |           |                | NA             |                                                                                                            |
|                                 | SPRAY                                                                                        | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                            |
| ACCURACY - -                    | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                            |
| SPEC: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
| DEMO: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
| ZONE NO.: SC353202              |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
| SUBMERGENCE: NA                 | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                              |
| SPRAY: NA                       | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                    |
| EQUIPMENT NOT SUBJECT TO        | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.114-5000E                       |                    |                    |                    |           |                |                | 3. OPERABILITY PERIOD EXTENDED FROM 100 HOURS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS. SEE REF 5. |
| SUBMERGENCE OR SPRAY.           | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C1                                   |                    |                    |                    |           |                |                |                                                                                                            |
| DOCUMENTATION ACCEPTABILITY:    | 4. CALCULATION NO. 12177-EQS-31                                                              |                    |                    |                    |           |                |                |                                                                                                            |
| ACCEPTABLE TO NUREG 0588, CAT I | 5. CALCULATION NO. 12177-EQS-32                                                              |                    |                    |                    |           |                |                |                                                                                                            |
|                                 |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
|                                 |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
| MAINT/SURVEILL - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
| REFERENCE: 2                    |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
|                                 |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
| QUALIFIED LIFE - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
| (YEARS): 40 YEARS [R2]          |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
| REFERENCE: 4                    |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
|                                 |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
|                                 |                                                                                              |                    |                    |                    |           |                |                |                                                                                                            |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                            |

7

| EQUIPMENT DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|----------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |          |
| EQUIP NO.: 2HVR*FE37A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2,5       | AN + DATA      | YES            | - NOTE 3 |
| SPEC NO.: C071A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | TEMP (F):                                  | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1 |
| SYSTEM:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NORMAL                                     | 104/95             | 104                | 1                  | 2,4       | TEST-SIM       | NA             | - NOTE 2 |
| REACTOR BUILDING VENTILATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ABNORMAL                                   | 119 [R2]           | 119 [R2]           | 1                  | 2,4       | TEST-SIM       | NA             |          |
| TYPE: (DESCRIPTION)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ACCIDENT                                   | 175                | 340                | 1                  | 2         | TEST-SIM       | YES            |          |
| FLOW ELEMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | PRESS (PSIG)                               | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NORMAL                                     | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ABNORMAL                                   | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |          |
| MANUFACTURER:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ACCIDENT                                   | 2.8                | 43                 | 1                  | 2         | TEST-SIM       | YES            |          |
| FLUID COMPONENTS INC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RH (%):                                    | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1 |
| MODEL NO.: FR-72-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-SIM       | NA             |          |
| SAFETY FUNCTION: - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |          |
| SENSE AIR FLOW THROUGH NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RADIATION:                                 | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1 |
| VENTILATION EXHAUST ABOVE AND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NORM GAMMA                                 | 1.8E6              |                    | 1                  |           |                | NA             |          |
| BELOW REFUELING FLOOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ACC GAMMA                                  | 9.7E5 [R2]         | 1E8                | 1                  | 2         | TEST-SIM       | YES            |          |
| OP. CODE: A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |          |
| ACCURACY - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |          |
| SPEC: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                            |                    |                    |                    |           |                |                |          |
| DEMO: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                            |                    |                    |                    |           |                |                |          |
| ZONE NO.: SC289155                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                            |                    |                    |                    |           |                |                |          |
| SUBMERGENCE: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                            |                    |                    |                    |           |                |                |          |
| SPRAY: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                            |                    |                    |                    |           |                |                |          |
| EQUIPMENT NOT SUBJECT TO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                            |                    |                    |                    |           |                |                |          |
| SUBMERGENCE OR SPRAY.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                            |                    |                    |                    |           |                |                |          |
| DOCUMENTATION ACCEPTABILITY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            |                    |                    |                    |           |                |                |          |
| ACCEPTABLE TO NUREG 0588, CAT I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                            |                    |                    |                    |           |                |                |          |
| <div style="display: flex; justify-content: space-between;"> <div> <p>MAINT/SURVEILL - - -</p> <p>REFERENCE: 2</p> <p>QUALIFIED LIFE - - -</p> <p>(YEARS): 37 YEARS [R2]</p> <p>REFERENCE: 4</p> </div> <div> <p>DOCUMENT REFERENCE:</p> <p>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]</p> <p>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.114-5000E</p> <p>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 22-1-C2</p> <p>4. CALCULATION NO. 12177-EQS-31</p> <p>5. CALCULATION NO. 12177-EQS-32</p> </div> <div> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.</p> <p>3.OPERABILITY PERIOD EXTENDED FROM 100 HOURS TESTED VALUE TO 100 DAYS PLUS MARGIN BY ANALYSIS. SEE REF 5.</p> </div> </div> |                                            |                    |                    |                    |           |                |                |          |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                            |                    |                    |                    |           |                |                |          |



| EQUIPMENT DESCRIPTION                         |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |              |          |
|-----------------------------------------------|------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|--------------|----------|
|                                               |            | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN  DEMO | REMARKS  |
|                                               |            |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |              |          |
| EQUIP NO.:                                    | 2HVR*FE37B | OP.TIME:                                   | 100 DAYS        | >100 DAYS       | 3                  | 2,5       | AN + DATA   | YES          | - NOTE 3 |
| SPEC NO.:                                     | C071A      | TEMP (F):                                  |                 |                 |                    |           |             |              | - NOTE 1 |
| SYSTEM:                                       |            | NORMAL                                     | 104/95          | 104             | 1                  | 2,4       | TEST-SIM    | NA           | - NOTE 2 |
| REACTOR BUILDING VENTILATION                  |            | ABNORMAL                                   | 119 [R2]        | 119 [R2]        | 1                  | 2,4       | TEST-SIM    | NA           |          |
| TYPE: (DESCRIPTION)                           |            | ACCIDENT                                   | 175             | 340             | 1                  | 2         | TEST-SIM    | YES          |          |
| FLOW ELEMENT                                  |            | PRESS(PSIG)                                |                 |                 |                    |           |             |              | - NOTE 1 |
|                                               |            | NORMAL                                     | -.25"WG         | ATMOS           | 1                  | 2         | TEST-SIM    | NA           |          |
|                                               |            | ABNORMAL                                   | -.25"WG         | ATMOS           | 1                  | 2         | TEST-SIM    | NA           |          |
| MANUFACTURER:                                 |            | ACCIDENT                                   | 2.8             | 43              | 1                  | 2         | TEST-SIM    | YES          |          |
| FLUID COMPONENTS INC.                         |            | RH (%) :                                   |                 |                 |                    |           |             |              | - NOTE 1 |
| MODEL NO.:                                    | FR-72-4    | NORMAL                                     | 50              | 100             | 1                  | 2         | TEST-SIM    | NA           |          |
|                                               |            | ABNORMAL                                   | 50              | 100             | 1                  | 2         | TEST-SIM    | NA           |          |
| SAFETY FUNCTION: - - -                        |            | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM    | NA           |          |
| SENSE AIR FLOW THROUGH NORMAL                 |            | RADIATION:                                 |                 |                 |                    |           |             |              | - NOTE 1 |
| VENTILATION EXHAUST ABOVE AND                 |            | NORM GAMMA                                 | 1.8E6           |                 | 1                  |           |             | NA           |          |
| BELOW REFUELING FLOOR                         |            | ACC GAMMA                                  | 9.7E5 [R2]      | 1E8             | 1                  | 2         | TEST-SIM    | YES          |          |
| OP. CODE: A                                   |            | NORM BETA                                  | NA              |                 | 1                  |           |             | NA           |          |
|                                               |            | ACC BETA                                   | 6.1E6           |                 | 1                  |           |             | YES          |          |
|                                               |            | NEUTRON                                    | NA              |                 | 1                  |           |             | NA           |          |
|                                               |            | SPRAY                                      | NA              | NA              | NA                 | NA        | NA          | NA           |          |
| ACCURACY - - .                                |            | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA           |          |
| SPEC: NA                                      |            |                                            |                 |                 |                    |           |             |              |          |
| DEMO: NA                                      |            |                                            |                 |                 |                    |           |             |              |          |
| ZONE NO.:                                     | SC289155   |                                            |                 |                 |                    |           |             |              |          |
| SUBMERGENCE:                                  | NA         |                                            |                 |                 |                    |           |             |              |          |
| SPRAY:                                        | NA         |                                            |                 |                 |                    |           |             |              |          |
| EQUIPMENT NOT SUBJECT TO                      |            |                                            |                 |                 |                    |           |             |              |          |
| SUBMERGENCE OR SPRAY.                         |            |                                            |                 |                 |                    |           |             |              |          |
| DOCUMENTATION ACCEPTABILITY:                  |            |                                            |                 |                 |                    |           |             |              |          |
| ACCEPTABLE TO NUREG 0588,CAT I                |            |                                            |                 |                 |                    |           |             |              |          |
| MAINT/SURVEILL - - -                          |            |                                            |                 |                 |                    |           |             |              |          |
| REFERENCE: 2                                  |            |                                            |                 |                 |                    |           |             |              |          |
| QUALIFIED LIFE - - -                          |            |                                            |                 |                 |                    |           |             |              |          |
| (YEARS): 37 YEARS [R2]                        |            |                                            |                 |                 |                    |           |             |              |          |
| REFERENCE: 4                                  |            |                                            |                 |                 |                    |           |             |              |          |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |            |                                            |                 |                 |                    |           |             |              |          |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS  
MAX DESIGN/AVERAGE.  
3.OPERABILITY PERIOD EXTENDED FROM 100  
HOURS TESTED VALUE TO 100 DAYS PLUS  
MARGIN BY ANALYSIS. SEE REF 5.



QUAL REF # C071ABV REV 2

19-Mar-86

| EQUIPMENT DESCRIPTION                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                               |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             | REMARKS     |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|
|                                                             | PARAMETER                                                                                                                                                                                                                                                                                                | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |                                                                                                                                                                                                                                                                               | QUAL METHOD | MARGIN DEMO |             |
|                                                             |                                                                                                                                                                                                                                                                                                          |                 |                 | SPECIFIED          | QUALIFIED                                                                                                                                                                                                                                                                     |             |             |             |
| EQUIP NO.: 2GTS*TIS29A                                      | OP.TIME:                                                                                                                                                                                                                                                                                                 | 100 DAYS        | >100 DAYS       | 3                  | 2                                                                                                                                                                                                                                                                             | TEST-SIM    | YES         |             |
| SPEC NO.: C071A                                             | TEMP (F):                                                                                                                                                                                                                                                                                                | - - - -         | - - - -         | - - - -            | - - - -                                                                                                                                                                                                                                                                       | - - - -     | - - - -     | NOTE 1      |
| SYSTEM:                                                     | NORMAL                                                                                                                                                                                                                                                                                                   | 104/88 [R2]     | 120             | 1                  | 2                                                                                                                                                                                                                                                                             | TEST-SIM    | NA          | NOTE 2      |
| STANDBY GAS TREATMENT                                       | ABNORMAL                                                                                                                                                                                                                                                                                                 | NA [R2]         | 120             | 1                  | 2                                                                                                                                                                                                                                                                             | TEST-SIM    | NA          |             |
| TYPE: (DESCRIPTION)                                         | ACCIDENT                                                                                                                                                                                                                                                                                                 | NA              | 255             | 1                  | 2                                                                                                                                                                                                                                                                             | TEST-SIM    | YES         |             |
| TEMPERATURE SWITCH                                          | PRESS(PSIG)                                                                                                                                                                                                                                                                                              | - - - -         | - - - -         | - - - -            | - - - -                                                                                                                                                                                                                                                                       | - - - -     | - - - -     | NOTE 1      |
|                                                             | NORMAL                                                                                                                                                                                                                                                                                                   | ATMOS           | ATMOS           | 1                  | 2                                                                                                                                                                                                                                                                             | TEST-SIM    | NA          |             |
|                                                             | ABNORMAL                                                                                                                                                                                                                                                                                                 | NA [R2]         | ATMOS           | 1                  | 2                                                                                                                                                                                                                                                                             | TEST-SIM    | NA          |             |
| MANUFACTURER: UNITED ELECTRIC                               | ACCIDENT                                                                                                                                                                                                                                                                                                 | NA              | 18              | 1                  | 2                                                                                                                                                                                                                                                                             | TEST-SIM    | YES         |             |
|                                                             | RH (%)                                                                                                                                                                                                                                                                                                   | - - - -         | - - - -         | - - - -            | - - - -                                                                                                                                                                                                                                                                       | - - - -     | - - - -     | NOTE 1      |
| MODEL NO.: 802P-6BS [R2]                                    | NORMAL                                                                                                                                                                                                                                                                                                   | 90 [R2]         | 100             | 1                  | 2                                                                                                                                                                                                                                                                             | TEST-SIM    | NA          | NOTE 3 [R2] |
|                                                             | ABNORMAL                                                                                                                                                                                                                                                                                                 | NA [R2]         | 100             | 1                  | 2                                                                                                                                                                                                                                                                             | TEST-SIM    | NA          |             |
| SAFETY FUNCTION: - - -                                      | ACCIDENT                                                                                                                                                                                                                                                                                                 | NA              | 100             | 1                  | 2                                                                                                                                                                                                                                                                             | TEST-SIM    | NA          |             |
| MEASURE TEMP. OF CHARCOAL                                   | RADIATION:                                                                                                                                                                                                                                                                                               | - - - -         | - - - -         | - - - -            | - - - -                                                                                                                                                                                                                                                                       | - - - -     | - - - -     | NOTE 1      |
| ABSORBER AND ACTUATE FILTER                                 | NORM GAMMA                                                                                                                                                                                                                                                                                               | 2.9E3 [R2]      |                 | 4                  |                                                                                                                                                                                                                                                                               |             | NA          |             |
| TRAIN                                                       | ACC GAMMA                                                                                                                                                                                                                                                                                                | 6.9E6 [R2]      | 1E7             | 4                  | 2                                                                                                                                                                                                                                                                             | TEST-SIM    | YES         |             |
| OP. CODE: A                                                 | NORM BETA                                                                                                                                                                                                                                                                                                | NA              |                 | 1                  |                                                                                                                                                                                                                                                                               |             | NA          |             |
|                                                             | ACC BETA                                                                                                                                                                                                                                                                                                 | 1.09E2          |                 | 4                  |                                                                                                                                                                                                                                                                               |             | YES         |             |
|                                                             | NEUTRON                                                                                                                                                                                                                                                                                                  | NA              |                 | 1                  |                                                                                                                                                                                                                                                                               |             | NA          |             |
|                                                             | SPRAY                                                                                                                                                                                                                                                                                                    | NA              | NA              | NA                 | NA                                                                                                                                                                                                                                                                            | NA          | NA          |             |
| ACCURACY - -                                                | SUBMERGENCE                                                                                                                                                                                                                                                                                              | NA              | NA              | NA                 | NA                                                                                                                                                                                                                                                                            | NA          | NA          |             |
| SPEC: +/-1.0% SPAN                                          |                                                                                                                                                                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             |             |
| DEMO: +/-0.3% SPAN                                          |                                                                                                                                                                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             |             |
| ZONE NO.: S6261356                                          |                                                                                                                                                                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             |             |
| SUBMERGENCE: NA                                             |                                                                                                                                                                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             |             |
| SPRAY: NA                                                   |                                                                                                                                                                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             |             |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY.              |                                                                                                                                                                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             |             |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0598,CAT I | DOCUMENT REFERENCE:<br>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1,REV 3, DEC 20, 1985. [R2]<br>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.144-5000A<br>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-15-B<br>4. CALCULATION NO. 12177-PR(C)-22-N-0 [R2] |                 |                 |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.<br>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.<br>3.SWITCHES WERE QUALIFIED AT 100 PERCENT HUMIDITY, THEREFORE 90 PERCENT HUMIDITY WILL NOT HAVE ANY DETRIMENTAL EFFECT ON THEM. [R2] |             |             |             |
| MAINT/SURVEILL - - -                                        |                                                                                                                                                                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             |             |
| REFERENCE: 2                                                |                                                                                                                                                                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             |             |
| QUALIFIED LIFE - - -                                        |                                                                                                                                                                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             |             |
| (YEARS): 10                                                 |                                                                                                                                                                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             |             |
| REFERENCE: 2                                                |                                                                                                                                                                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             |             |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.               |                                                                                                                                                                                                                                                                                                          |                 |                 |                    |                                                                                                                                                                                                                                                                               |             |             |             |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                          |               | PARAMETER   | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS     |
|------------------------------------------------|---------------|-------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|-------------|
|                                                |               |             |                 |                 | SPECIFIED          | QUALIFIED |             |             |             |
| EQUIP NO.:                                     | 2GTS*TIS29B   | OP.TIME:    | 100 DAYS        | >100 DAYS       | 3                  | 2         | TEST-SIM    | YES         |             |
| SPEC NO.:                                      | C071A         | TEMP (F):   |                 |                 |                    |           |             |             |             |
| SYSTEM:                                        |               | NORMAL      | 104/87 [R2]     | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1      |
| STANDBY GAS TREATMENT                          |               | ABNORMAL    | NA [R2]         | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2      |
| TYPE: (DESCRIPTION)                            |               | ACCIDENT    | NA              | 255             | 1                  | 2         | TEST-SIM    | YES         |             |
| TEMPERATURE SWITCH                             |               | PRESS(PSIG) |                 |                 |                    |           |             |             |             |
|                                                |               | NORMAL      | ATMOS           | ATMOS           | 1                  | 2         | TEST-SIM    | NA          | NOTE 1      |
|                                                |               | ABNORMAL    | NA [R2]         | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |             |
| MANUFACTURER: UNITED ELECTRIC                  |               | ACCIDENT    | NA              | 18              | 1                  | 2         | TEST-SIM    | YES.        |             |
|                                                |               | RH (%):     |                 |                 |                    |           |             |             | NOTE 1      |
| MODEL NO.:                                     | 802P-6BS [R2] | NORMAL      | 90 [R2]         | 100             | 1                  | 2         | TEST-SIM    | NA          | NOTE 3 [R2] |
|                                                |               | ABNORMAL    | NA [R2]         | 100             | 1                  | 2         | TEST-SIM    | NA          |             |
| SAFETY FUNCTION: - - -                         |               | ACCIDENT    | NA              | 100             | 1                  | 2         | TEST-SIM    | NA          |             |
| MEASURE TEMP. OF CHARCOAL                      |               | RADIATION:  |                 |                 |                    |           |             |             | NOTE 1      |
| ABSORBER AND ACTUATE FILTER                    |               | NORM GAMMA  | 2.9E3 [R2]      |                 | 4                  |           |             | NA          |             |
| TRAIN                                          |               | ACC GAMMA   | 6.9E6 [R2]      | 1E7             | 4                  | 2         | TEST-SIM    | YES         |             |
| OP. CODE: A                                    |               | NORM BETA   | NA              |                 | 1                  |           |             | NA          |             |
|                                                |               | ACC BETA    | 1.09E2          |                 | 4                  |           |             | YES         |             |
|                                                |               | NEUTRON     | NA              |                 | 1                  |           |             | NA          |             |
|                                                |               | SPRAY       | NA              | NA              | NA                 | NA        | NA          | NA          |             |
| ACCURACY - -                                   |               | SUBMERGENCE | NA              | NA              | NA                 | NA        | NA          | NA          |             |
| SPEC: +/-1.0% SPAN                             |               |             |                 |                 |                    |           |             |             |             |
| DEMO: +/-0.3% SPAN                             |               |             |                 |                 |                    |           |             |             |             |
| ZONE NO.:                                      | SG261355      |             |                 |                 |                    |           |             |             |             |
| SUBMERGENCE:                                   | NA            |             |                 |                 |                    |           |             |             |             |
| SPRAY:                                         | NA            |             |                 |                 |                    |           |             |             |             |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY. |               |             |                 |                 |                    |           |             |             |             |
| DOCUMENTATION ACCEPTABILITY:                   |               |             |                 |                 |                    |           |             |             |             |
| ACCEPTABLE TO NUREG 0588,CAT I                 |               |             |                 |                 |                    |           |             |             |             |
| MAINT/SURVEILL - - -                           |               |             |                 |                 |                    |           |             |             |             |
| REFERENCE: 2                                   |               |             |                 |                 |                    |           |             |             |             |
| QUALIFIED LIFE - - -                           |               |             |                 |                 |                    |           |             |             |             |
| (YEARS): 10                                    |               |             |                 |                 |                    |           |             |             |             |
| REFERENCE: 2                                   |               |             |                 |                 |                    |           |             |             |             |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.  |               |             |                 |                 |                    |           |             |             |             |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
 3.SWITCHES WERE QUALIFIED AT 100 PERCENT HUMIDITY, THEREFORE 90 PERCENT HUMIDITY WILL NOT HAVE ANY DETRIMENTAL EFFECT ON THEM. [R2]  
 4. CALCULATION NO. 12177-PR(C)-22-N-0 [R2]



QUAL REF #\_C071ABX REV 0

09-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2RHS*TIS41A          | OP.TIME:                                   | 6 HRS.             | 100 DAYS           | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.: C071A                 | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                         |                                            |                    |                    |                    |           |                |                |         |
| RESIDUAL HEAT REMOVAL           | NORMAL                                     | 104/85             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                 | ABNORMAL                                   | 87                 | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)             | ACCIDENT                                   | 200                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
| TEMPERATURE SWITCH              | PRESS(PSIG)                                |                    |                    |                    |           |                |                |         |
|                                 | NORMAL                                     | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                 | ABNORMAL                                   | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: UNITED ELECTRIC   | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
| MODEL NO.: 802P-SAS             | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
|                                 | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -          | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| ISOLATE RHR STEAM CONDENSING    | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| LINE, RCIC STEAM LINE, & RHR    | NORM GAMMA                                 | 7.9E6              |                    | 1                  |           |                | NA             |         |
| SHUTDOWN COOLING LINE FOR MELC  | ACC GAMMA                                  | 1.7E6              | 1E7                | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: A                     | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | ACC BETA                                   | 7.3E3              |                    | 1                  |           |                | YES            |         |
|                                 | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/- 1.0% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/- 0.3% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC261145              |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                 |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA                       |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 10                     |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985.
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.144-5000A
3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C15

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



QUAL REF #\_C071ABY\_\_\_\_\_ REV 0

09-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2RHS*TIS41B          | OP.TIME:                                   | 6 HRS.             | > 100 DAYS         | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.: C071A                 | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                         |                                            |                    |                    |                    |           |                |                |         |
| RESIDUAL HEAT REMOVAL           | NORMAL                                     | 104/85             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                 | ABNORMAL                                   | 87                 | 120                | 1                  | 2         | TEST-SIM       | NA             |         |
| ITYPE: (DESCRIPTION)            | ACCIDENT                                   | 200                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
| TEMPERATURE SWITCH              | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                                 | NORMAL                                     | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: UNITED ELECTRIC   | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                 | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.: 802P-5AS             | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -          | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| ISOLATE RHR STEAM CONDENSING    | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| LINE, RCIC STEAM LINE, & RHR    | NORM GAMMA                                 | 7.9E6              |                    | 1                  |           |                | NA             |         |
| SHUTDOWN COOLING LINE FOR MELC  | ACC GAMMA                                  | 1.7E6              | 1E7                | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: A                     | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | ACC BETA                                   | 7.3E3              |                    | 1                  |           |                | YES            |         |
|                                 | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/- 1.0% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/- 0.3% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC261145              |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                 |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA                       |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 10                     |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985.
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.144-5000A
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C15

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



QUAL REF #\_C071ABZ\_ REV 0

09-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2RHS*TIS43A          | OP.TIME:                                   | 6 HRS.             | > 100 DAYS         | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.: C071A                 | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                         | NORMAL                                     | 104/88             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
| RESIDUAL HEAT REMOVAL           | ABNORMAL                                   | 94                 | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)             | ACCIDENT                                   | 175                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
| TEMPERATURE SWITCH              | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                 | NORMAL                                     | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: UNITED ELECTRIC   | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                 | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.: 802P-SAS             | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -          | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| ISOLATE RHR STEAM CONDENSING    | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| LINE, RCIC STEAM LINE, & RHR    | NORM GAMMA                                 | 5.1E5              |                    | 1                  |           |                | NA             |         |
| SHUTDOWN COOLING LINE FOR MELC  | ACC GAMMA                                  | 1.6E6              | 1E7                | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: A                     | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | ACC BETA                                   | 7.3E3              |                    | 1                  |           |                | YES            |         |
|                                 | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/- 1.0% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/- 0.3% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC240135              |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                 |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA                       |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 10                     |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985.
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.144-5000A
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C15

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.





09-Feb-86

QUAL REF #\_C071ACA\_ REV 0

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2RHS*TIS43B          | OP.TIME:                                   | 6 HRS.             | > 100 DAYS         | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.: C071A                 | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                         |                                            |                    |                    |                    |           |                |                |         |
| RESIDUAL HEAT REMOVAL           | NORMAL                                     | 104/88             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                 | ABNORMAL                                   | 94                 | 120                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)             | ACCIDENT                                   | 175                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
| TEMPERATURE SWITCH              | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                 | NORMAL                                     | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: UNITED ELECTRIC   | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                 | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.: 802P-5AS             | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -          | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| ISOLATE RHR STEAM CONDENSING    | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| LINE, RCIC STEAM LINE, & RHR    | NORM GAMMA                                 | 5.1E5              |                    | 1                  |           |                | NA             |         |
| SHUTDOWN COOLING LINE FOR MELC  | ACC GAMMA                                  | 1.6E6              | 1E7                | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: A                     | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | ACC BETA                                   | 7.3E3              |                    | 1                  |           |                | YES            |         |
|                                 | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/- 1.0% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/- 0.3% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC240135              |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                 |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA                       |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 10                     |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985.
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.144-5000A
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C15

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



QUAL REF #\_C071ACB\_ REV 0

19-Mar-86

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2RHS*TIS45A         | OP.TIME:                                   | 6 HRS.             | > 100 DAYS         | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.: C071A                | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM:                        | NORMAL                                     | 104/85             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| RESIDUAL HEAT REMOVAL          | ABNORMAL                                   | 92                 | 120                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)            | ACCIDENT                                   | 175                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
| TEMPERATURE SWITCH             | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                | NORMAL                                     | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: UNITED ELECTRIC  | ABNORMAL                                   | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
| MODEL NO.: 802P-5AS            | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
|                                | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -         | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| ISOLATE RHR STEAM CONDENSING   | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| LINE, RCIC STEAM LINE, & RHR   | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| SHUTDOWN COOLING LINE FOR MELC | NORM GAMMA                                 | 1.1E7              |                    | 1                  |           |                | NA             |         |
| OP. CODE: A                    | ACC GAMMA                                  | 9.1E5              | 1E7                | 1                  | 2         | TEST-SIM       | YES            |         |
|                                | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                | ACC BETA                                   | 7.3E3              |                    | 1                  |           |                | YES            |         |
|                                | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
| ACCURACY - -                   | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
|                                | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.: SC175102             |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA                      |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY           |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 10                    |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1,REV 3, DEC 20, 1985.
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.144-5000A
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C15

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



QUAL REF #\_C071ACC\_ REV 0

19-Mar-86

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|--------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2RHS*TIS45B         | OP.TIME:                                   | 6 HRS.          | > 100 DAYS      | 3                  | 2         | TEST-SIM    | YES         |         |
| SPEC NO.: C071A                | TEMP (F):                                  |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                        | NORMAL                                     | 104/85          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
| RESIDUAL HEAT REMOVAL          | ABNORMAL                                   | 92              | 120             | 1                  | 2         | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)            | ACCIDENT                                   | 175             | 255             | 1                  | 2         | TEST-SIM    | YES         |         |
| TEMPERATURE SWITCH             | PRESS (PSIG)                               |                 |                 |                    |           |             |             | NOTE 1  |
|                                | NORMAL                                     | -.25"W.G        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                | ABNORMAL                                   | -.25"W.G        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: UNITED ELECTRIC  | ACCIDENT                                   | 2.8             | 18              | 1                  | 2         | TEST-SIM    | YES         |         |
| MODEL NO.: 802P-5AS            | RH (%):                                    |                 |                 |                    |           |             |             | NOTE 1  |
|                                | NORMAL                                     | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                | ABNORMAL                                   | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -         | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| ISOLATE RHR STEAM CONDENSING   | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1  |
| LINE, RCIC STEAM LINE, & RHR   | NORM GAMMA                                 | 1.1E7           |                 | 1                  |           |             | NA          |         |
| SHUTDOWN COOLING LINE FOR MELC | ACC GAMMA                                  | 9.1E5           | 1E7             | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE: A                    | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                | ACC BETA                                   | 7.3E3           |                 | 1                  |           |             | YES         |         |
|                                | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                | SPRAY                                      | NA              | NA              | NA                 | NA        | NA          | NA          |         |
|                                | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ACCURACY - -                   |                                            |                 |                 |                    |           |             |             |         |
| SPEC: +/- 1.0% SPAN            |                                            |                 |                 |                    |           |             |             |         |
| DEMO: +/- 0.3% SPAN            |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.: SC196116             |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE: NA                |                                            |                 |                 |                    |           |             |             |         |
| SPRAY: NA                      |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE OR SPRAY           |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 10                    |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |                                            |                 |                 |                    |           |             |             |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1,REV 3, DEC 20, 1985.
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.144-5000A
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C15

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



QUAL REF #\_C071ACD REV 0

09-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2RHS*TIS46A          | OP.TIME:                                   | 6 HRS.             | > 100 DAYS         | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.: C071A                 | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                         |                                            |                    |                    |                    |           |                |                |         |
| RESIDUAL HEAT REMOVAL           | NORMAL                                     | 104/95             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                 | ABNORMAL                                   | .104               | 120                | 1                  | 2,4       | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)             | ACCIDENT                                   | 175                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
| TEMPERATURE SWITCH              | PRESS(PSIG)                                |                    |                    |                    |           |                |                |         |
|                                 | NORMAL                                     | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                 | ABNORMAL                                   | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: UNITED ELECTRIC   | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                 | RH (%):                                    |                    |                    |                    |           |                |                |         |
| MODEL NO.: 802P-3AS             | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                 | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -          | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| ISOLATE RHR STEAM CONDENSING    | RADIATION:                                 |                    |                    |                    |           |                |                |         |
| LINE, RCIC STEAM LINE, & RHR    | NORM GAMMA                                 | 1.8E6              |                    | 1                  |           |                | NA             | NOTE 1  |
| SHUTDOWN COOLING LINE FOR MELC  | ACC GAMMA                                  | 1.8E6              | 1E7                | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: A                     | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | ACC BETA                                   | 7.3E3              |                    | 1                  |           |                | YES            |         |
|                                 | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/- 1.0% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/- 0.3% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC289155              |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                 |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA                       |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 9.45                   |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                  |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985.
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.144-5000A
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C15
- CALCULATION NO. 12177-EQS-31

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.





QUAL REF #\_C071ACE\_ REV 0

09-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2RHS*TIS46B          | OP.TIME:                                   | 6 HRS.             | 100 DAYS           | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.: C071A                 | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM:                         |                                            |                    |                    |                    |           |                |                |         |
| RESIDUAL HEAT REMOVAL           | NORMAL                                     | 104/95             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                 | ABNORMAL                                   | 104.               | 120                | 1                  | 2,4       | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)             | ACCIDENT                                   | 175                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
| TEMPERATURE SWITCH              | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                                 | NORMAL                                     | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: UNITED ELECTRIC   | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                 | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.: 802P-5AS             | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -          | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| ISOLATE RHR STEAM CONDENSING    | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| LINE, RCIC STEAM LINE, & RHR    | NORM GAMMA                                 | 1.8E6              |                    | 1                  |           |                | NA             |         |
| SHUTDOWN COOLING LINE FOR MELC  | ACC GAMMA                                  | 1.8E6              | 1E7                | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: A                     | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | ACC BETA                                   | 7.3E3              |                    | 1                  |           |                | YES            |         |
|                                 | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/- 1.0% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/- 0.3% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC289155              |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                 |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA                       |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 9.45                   |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                  |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985.
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.144-5000A
3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C15
4. CALCULATION NO. 12177-EQS-31

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



QUAL REF #\_C071ACF\_\_\_\_\_ REV 0

09-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2RHS*TIS44A          | OP.TIME:                                   | 6 HRS.             | > 100 DAYS         | 3                  | 2         | TEST-SIM       | YES            |         |
| SPEC NO.: C071A                 | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                         |                                            |                    |                    |                    |           |                |                |         |
| RESIDUAL HEAT REMOVAL           | NORMAL                                     | 104/93             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                 | ABNORMAL                                   | 106                | 120                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)             | ACCIDENT                                   | 200                | 255                | 1                  | 2         | TEST-SIM       | YES            |         |
| TEMPERATURE SWITCH              | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                 | NORMAL                                     | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | -.25"W.G           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: UNITED ELECTRIC   | ACCIDENT                                   | 2.8                | 18                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                 | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.: 802P-5AS             | NORMAL                                     | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                 | ABNORMAL                                   | 50                 | 59                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -          | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| ISOLATE RHR STEAM CONDENSING    | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| LINE, RCIC STEAM LINE, & RHR    | NORM GAMMA                                 | 2.0E6              |                    | 1                  |           |                | NA             |         |
| SHUTDOWN COOLING LINE FOR MELC  | ACC GAMMA                                  | 1.7E6              | 1E7                | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: A                     | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | ACC BETA                                   | 7.3E3              |                    | 1                  |           |                | YES            |         |
|                                 | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: +/- 1.0% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: +/- 0.3% SPAN             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC215122              |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                 |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA                       |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |
|                                 |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 10                     |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985.
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.144-5000A
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C15

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



QUAL REF #\_C071ACG\_\_\_\_\_ REV 0

23-Mar-86

| EQUIPMENT DESCRIPTION          |  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|--------------------------------|--|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |  | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |  |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2RHS*TIS44B         |  | OP.TIME:                                   | 6 HRS.          | > 100 DAYS      | 3                  | 2         | TEST-SIM    | YES         |         |
| SPEC NO.: C071A                |  | TEMP (F):                                  |                 |                 |                    |           |             |             |         |
| SYSTEM:                        |  | NORMAL                                     | 104/93          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
| RESIDUAL HEAT REMOVAL          |  | ABNORMAL                                   | 106             | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)            |  | ACCIDENT                                   | 200             | 255             | 1                  | 2         | TEST-SIM    | YES         |         |
| TEMPERATURE SWITCH             |  | PRESS(PSIG)                                |                 |                 |                    |           |             |             | NOTE 1  |
|                                |  | NORMAL                                     | -.25"W.G        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |  | ABNORMAL                                   | -.25"W.G        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: UNITED ELECTRIC  |  | ACCIDENT                                   | 2.8             | 18              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                |  | RH (%)                                     |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.: 802P-5AS            |  | NORMAL                                     | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |  | ABNORMAL                                   | 50              | 59              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -         |  | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| ISOLATE RHR STEAM CONDENSING   |  | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1  |
| LINE, RCIC STEAM LINE, & RHR   |  | NORM GAMMA                                 | 2.0E6           |                 | 1                  |           |             | NA          |         |
| SHUTDOWN COOLING LINE FOR MELC |  | ACC GAMMA                                  | 1.7E6           | 1E7             | 1                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE: A                    |  | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                |  | ACC BETA                                   | 7.3E3           |                 | 1                  |           |             | YES         |         |
|                                |  | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                |  | SPRAY                                      | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ACCURACY - -                   |  | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: +/- 1.0% SPAN            |  |                                            |                 |                 |                    |           |             |             |         |
| DEMO: +/- 0.3% SPAN            |  |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.: SC215122             |  |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE: NA                |  |                                            |                 |                 |                    |           |             |             |         |
| SPRAY: NA                      |  |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |  |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE OR SPRAY           |  |                                            |                 |                 |                    |           |             |             |         |
|                                |  |                                            |                 |                 |                    |           |             |             |         |
|                                |  |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |  |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |  |                                            |                 |                 |                    |           |             |             |         |
|                                |  |                                            |                 |                 |                    |           |             |             |         |
|                                |  |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |  |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |  |                                            |                 |                 |                    |           |             |             |         |
|                                |  |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |  |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 10                    |  |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |  |                                            |                 |                 |                    |           |             |             |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1,REV 3, DEC 20, 1985.
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.144-5000A
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C15

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



### ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------|--|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |  | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |  |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CCP*PT90A          |  | OP.TIME:                                   | 100 DAYS           | >100DA [R2]        | 3                  | 2,6       | TEST-SIM       | YES            |         |
| SPEC NO.: C071M                |  | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM: REACTOR PLANT          |  | NORMAL                                     | 104/85             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| COMPONENT COOLING WATER        |  | ABNORMAL                                   | 87                 | 120                | 1                  | 2         | TEST-SIM       | NA             |         |
| SYSTEM                         |  | ACCIDENT                                   | 200                | 318                | 1                  | 2         | TEST-SIM       | YES            |         |
| TYPE: (DESCRIPTION)            |  | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
| PRESSURE TRANSMITTER           |  | NORMAL                                     | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |  | ABNORMAL                                   | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: ROSEMOUNT        |  | ACCIDENT                                   | 2.8                | 73                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                |  | RH (%) :                                   |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.: 1153GB7             |  | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |  | ABNORMAL                                   | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -         |  | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| TRANSMIT RBCLCW TO             |  | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| 2RCS-P1A CLRS                  |  | NORM GAMMA                                 | 4.0E6              |                    | 5                  |           |                | NA             | NOTE 5  |
|                                |  | ACC GAMMA                                  | 4.3E6              | 2.2E7              | 5                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: A                    |  | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                |  | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            | NOTE 3  |
|                                |  | NEUTRON                                    | NA[R2]             |                    | 1                  |           |                | NA             |         |
|                                |  | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - - NOTE 4            |  | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: 0.25% CALIB SPAN         |  |                                            |                    |                    |                    |           |                |                |         |
| DEMO: 3.7% CALIB SPAN          |  |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC261145             |  |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                |  |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA                      |  |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |  |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE (OR) SPRAY         |  |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |  |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |  |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |  |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |  |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 20                    |  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                 |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
|                                |  |                                            |                    |                    |                    |           |                |                |         |
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## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       |                                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION TEST RESULTS |                 |                 |                    |           |             |             |         |
|-------------------------------------------------------------|----------------------------------|---------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                             |                                  | PARAMETER                                               | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                             |                                  |                                                         |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                                  | 2CCP*PT90B                       | OP.TIME:                                                | 100 DAYS        | >100DA [R2]     | 3                  | 2,6       | TEST-SIM    | YES         |         |
| SPEC NO.:                                                   | C071M                            | TEMP (F):                                               | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| SYSTEM:                                                     | REACTOR PLANT                    | NORMAL                                                  | 104/88          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                                             | CLOSED-LOOP COOLING WATER SYSTEM | ABNORMAL                                                | 94              | 120             | 1                  | 2         | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)                                         | PRESSURE TRANSMITTER             | ACCIDENT                                                | 175             | 318             | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                             |                                  | PRESS(PSIG)                                             | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                                             |                                  | NORMAL                                                  | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                             |                                  | ABNORMAL                                                | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                                               | ROSEMOUNT                        | ACCIDENT                                                | 2.8             | 73              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                             |                                  | RH (%):                                                 | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| MODEL NO.:                                                  | 1153GB7                          | NORMAL                                                  | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                             |                                  | ABNORMAL                                                | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:                                            | - - -                            | ACCIDENT                                                | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                             | TRANSMIT RBCLCW TO 2RCS-P1A CLRS | RADIATION:                                              | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                                             |                                  | NORM GAMMA                                              | 2.55E5          |                 | 1                  |           |             | NA          | NOTE 5  |
|                                                             |                                  | ACC GAMMA                                               | 5.0E5           | 2.2E7           | 5                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                                                   | A                                | NORM BETA                                               | NA              |                 | 1                  |           |             | NA          |         |
|                                                             |                                  | ACC BETA                                                | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3  |
|                                                             |                                  | NEUTRON                                                 | NA              |                 | 1                  |           |             | NA          |         |
|                                                             |                                  | SPRAY                                                   | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY - -                                                | NOTE 4                           | SUBMERGENCE                                             | NA              | NA              | NA                 | NA        | NA          | NA          |         |
|                                                             | SPEC: 0.25% CALIB SPAN           |                                                         |                 |                 |                    |           |             |             |         |
|                                                             | DEMO: 3.5% CALIB SPAN            |                                                         |                 |                 |                    |           |             |             |         |
| ZONE NO.:                                                   | SC240135                         |                                                         |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                                | NA                               |                                                         |                 |                 |                    |           |             |             |         |
| SPRAY:                                                      | NA                               |                                                         |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY             |                                  |                                                         |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                                  |                                                         |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                                        |                                  |                                                         |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                                |                                  |                                                         |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                                        |                                  |                                                         |                 |                 |                    |           |             |             |         |
| (YEARS): 20                                                 |                                  |                                                         |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                                              |                                  |                                                         |                 |                 |                    |           |             |             |         |
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| EQUIPMENT DESCRIPTION                                       |  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------|--|----------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             |  | PARAMETER                                                                                    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                                          |
|                                                             |  |                                                                                              |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                                                  |
| EQUIP NO.: 2CMS*LT9A                                        |  | OP.TIME:                                                                                     | 100 DAYS        | >100DA [R2]     | 3                  | 2,6       | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                  |
| SPEC NO.: C071M                                             |  | TEMP (F):                                                                                    | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                                                                                                                                                                                                           |
| SYSTEM: CONTAINMENT                                         |  | NORMAL                                                                                       | 104/85          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2                                                                                                                                                                                                                                                           |
| ATMOSPHERE MONITORING SYSTEM                                |  | ABNORMAL                                                                                     | 92              | 120             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| TYPE: (DESCRIPTION)                                         |  | ACCIDENT                                                                                     | 190[R2]         | 318             | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                  |
| LEVEL TRANSMITTER                                           |  | PRESS(PSIG)                                                                                  | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                                                                                                                                                                                                           |
|                                                             |  | NORMAL                                                                                       | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
|                                                             |  | ABNORMAL                                                                                     | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| MANUFACTURER: ROSEMOUNT                                     |  | ACCIDENT                                                                                     | 2.8             | 73              | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                  |
|                                                             |  | RH (%):                                                                                      | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                                                                                                                                                                                                           |
| MODEL NO.: 1153DB5                                          |  | NORMAL                                                                                       | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
|                                                             |  | ABNORMAL                                                                                     | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| SAFETY FUNCTION: - - -                                      |  | ACCIDENT                                                                                     | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| TRANSMIT SUPPRESSION POOL LEVEL                             |  | RADIATION:                                                                                   | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                                                                                                                                                                                                           |
|                                                             |  | NORM GAMMA                                                                                   | 5.5E6           |                 | 1                  |           |             | NA          | NOTE 5                                                                                                                                                                                                                                                           |
|                                                             |  | ACC GAMMA                                                                                    | 1.6E7           | 2.2E7           | 5                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                  |
| OP. CODE: A                                                 |  | NORM BETA                                                                                    | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                                                  |
|                                                             |  | ACC BETA                                                                                     | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3                                                                                                                                                                                                                                                           |
|                                                             |  | NEUTRON                                                                                      | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                                                  |
|                                                             |  | SPRAY                                                                                        | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| ACCURACY - - NOTE 4                                         |  | SUBMERGENCE                                                                                  | NA              | NA              | NA                 | NA        | NA          | NA          |                                                                                                                                                                                                                                                                  |
| SPEC: 0.25% CALIB SPAN                                      |  |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| DEMO: 3.6% CALIB SPAN                                       |  |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| ZONE NO.: SC175102                                          |  |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| SUBMERGENCE: NA                                             |  | DOCUMENT REFERENCE:                                                                          |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                     |
| SPRAY: NA                                                   |  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC 20, 1985 [R2] |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                           |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY             |  | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,                                                |                 |                 |                    |           |             |             | 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.                                                                                                                                                                                     |
|                                                             |  | SDDF # IEEE 7.131-5000E                                                                      |                 |                 |                    |           |             |             | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION. |
|                                                             |  | SDDF # IEEE 7.131-5000D                                                                      |                 |                 |                    |           |             |             | 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.                                                                                                                                                                                  |
|                                                             |  | SDDF # IEEE 7.131-5000B                                                                      |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |  | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 33-2-G5                                   |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                                             |  | 4. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028                                     |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                                             |  | 5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P                                  |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| MAINT/SURVEILL - - - REFERENCE: 2                           |  | 6. EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| QUALIFIED LIFE - - - (YEARS): 20 REFERENCE: 2,4             |  |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                                             |  | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |



QUAL REF #\_C071MAD\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION          |  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                 |                 |                    |           |             |             |         |
|--------------------------------|--|-------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |  | PARAMETER                                       | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |  |                                                 |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2CMS*LT9B           |  | OP.TIME:                                        | 100 DAYS        | >100DA [R2]     | 3                  | 2,6       | TEST-SIM    | YES         |         |
| SPEC NO.: C071M                |  | TEMP (F):                                       |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM: CONTAINMENT            |  | NORMAL                                          | 104/85          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
| ATMOSPHERE MONITORING          |  | ABNORMAL                                        | 92              | 120             | 1                  | 2         | TEST-SIM    | NA          |         |
| SYSTEM                         |  | ACCIDENT                                        | 190[R2]         | 318             | 1                  | 2         | TEST-SIM    | YES         |         |
| TYPE: (DESCRIPTION)            |  | PRESS (PSIG)                                    |                 |                 |                    |           |             |             | NOTE 1  |
| LEVEL TRANSMITTER              |  | NORMAL                                          | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |  | ABNORMAL                                        | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: ROSEMOUNT        |  | ACCIDENT                                        | 2.8             | 73              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                |  | RH (%):                                         |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.: 1153DB5             |  | NORMAL                                          | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |  | ABNORMAL                                        | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -         |  | ACCIDENT                                        | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| TRANSMIT SUPPRESSION POOL      |  | RADIATION:                                      |                 |                 |                    |           |             |             | NOTE 1  |
| LEVEL                          |  | NORM GAMMA                                      | 5.5E6           |                 | 1                  |           |             | NA          | NOTE 5  |
|                                |  | ACC GAMMA                                       | 1.6E7           | 2.2E7           | 5                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE: A                    |  | NORM BETA                                       | NA              |                 | 1                  |           |             | NA          |         |
|                                |  | ACC BETA                                        | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3  |
|                                |  | NEUTRON                                         | NA              |                 | 1                  |           |             | NA          |         |
|                                |  | SPRAY                                           | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY - - NOTE 4            |  | SUBMERGENCE:                                    | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: 0.25% CALIB SPAN         |  |                                                 |                 |                 |                    |           |             |             |         |
| DEMO: 3.6% CALIB SPAN          |  |                                                 |                 |                 |                    |           |             |             |         |
| ZONE NO.: SC175102             |  | DOCUMENT REFERENCE:                             |                 |                 |                    |           |             |             |         |
| SUBMERGENCE: NA                |  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                 |                 |                    |           |             |             |         |
| SPRAY: NA                      |  | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]     |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |  | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                 |                 |                    |           |             |             |         |
| SUBMERGENCE (OR) SPRAY         |  | SDDF # IEEE 7.131-5000E                         |                 |                 |                    |           |             |             |         |
|                                |  | SDDF # IEEE 7.131-5000D                         |                 |                 |                    |           |             |             |         |
|                                |  | SDDF # IEEE 7.131-5000B                         |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |  | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |  | FILE NO. 33-2-G5                                |                 |                 |                    |           |             |             |         |
|                                |  | 4. EXTENDED QUALIFIED LIFE CALCULATION          |                 |                 |                    |           |             |             |         |
|                                |  | NO. 12177-EQS-028                               |                 |                 |                    |           |             |             |         |
|                                |  | 5. CASE SPECIFIC RADIATION CALCULATION          |                 |                 |                    |           |             |             |         |
|                                |  | NO. 12177-PR(C)-22-P                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |  | 6. EXTENDING POST ACCIDENT PERIOD CALCULATION   |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |  | NO. 12177-EQS-005                               |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |  |                                                 |                 |                 |                    |           |             |             |         |
| (YEARS): 20                    |  |                                                 |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                 |  |                                                 |                 |                 |                    |           |             |             |         |
|                                |  | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                 |                 |                    |           |             |             |         |

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
- 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
- 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.
- 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.
- 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.



18-Feb-86

QUAL REF #\_C071MAE\_\_\_\_ REV 2

| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION    |                 |                 |                    |           |             |             |         |
|--------------------------------|------------------|-----------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |                  | PARAMETER                                     | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |                  |                                               |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                     | 2CMS*LT11A       | OP.TIME:                                      | 100 DAYS        | >100DA [R2]     | 3                  | 2,6       | TEST-SIMCR2 | YES         |         |
| SPEC NO.:                      | C071M            | TEMP (F):                                     |                 |                 |                    |           |             |             |         |
| SYSTEM:                        | CONTAINMENT      | NORMAL                                        | 104/85          | 120             | 1                  | 2         | TEST-SIMCR2 | NA          | NOTE 1  |
| ATMOSPHERE MONITORING          |                  | ABNORMAL                                      | 92              | 120             | 1                  | 2         | TEST-SIMCR2 | NA          | NOTE 2  |
| SYSTEM                         |                  | ACCIDENT                                      | 190[R2]         | 318             | 1                  | 2         | TEST-SIMCR2 | YES         |         |
| TYPE: (DESCRIPTION)            |                  | PRESS(PSIG)                                   |                 |                 |                    |           |             |             |         |
| LEVEL TRANSMITTER              |                  | NORMAL                                        | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          | NOTE 1  |
|                                |                  | ABNORMAL                                      | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| MANUFACTURER: ROSEMOUNT        |                  | ACCIDENT                                      | 2.8             | 73              | 1                  | 2         | TEST-SIMCR2 | YES         |         |
|                                |                  | RH (%):                                       |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                     | 1153DB4          | NORMAL                                        | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |         |
|                                |                  | ABNORMAL                                      | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| SAFETY FUNCTION: - - -         |                  | ACCIDENT                                      | 100             | 100             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| TRANSMIT SUPPRESSION POOL      |                  | RADIATION:                                    |                 |                 |                    |           |             |             | NOTE 1  |
| LEVEL                          |                  | NORM GAMMA                                    | 5.5E6           |                 | 1                  |           |             | NA          | NOTE 5  |
|                                |                  | ACC GAMMA                                     | 1.6E7           | 2.2E7           | 5                  | 2         | TEST-SIMCR2 | YES         |         |
| OP. CODE: A                    |                  | NORM BETA                                     | NA              |                 | 1                  |           |             | NA          |         |
|                                |                  | ACC BETA                                      | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3  |
|                                |                  | NEUTRON                                       | NA              |                 | 1                  |           |             | NA          |         |
|                                |                  | SPRAY                                         | NA              | YES             | NA                 | 2         | TEST-SIMCR2 | NA          |         |
| ACCURACY - -                   | NOTE 4           | SUBMERGENCE                                   | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                          | 0.25% CALIB SPAN |                                               |                 |                 |                    |           |             |             |         |
| DEMO:                          | 3.6% CALIB SPAN  |                                               |                 |                 |                    |           |             |             |         |
| ZONE NO.:                      | SC175102         |                                               |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                   | NA               |                                               |                 |                 |                    |           |             |             |         |
| SPRAY:                         | NA               |                                               |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                               |                 |                 |                    |           |             |             |         |
| SUBMERGENCE (OR) SPRAY         |                  |                                               |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                               |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                  |                                               |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |                  |                                               |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |                  |                                               |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |                  |                                               |                 |                 |                    |           |             |             |         |
| (YEARS): 20                    |                  |                                               |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                 |                  |                                               |                 |                 |                    |           |             |             |         |
|                                |                  | [R2] INDICATES CHANGES MADE IN THIS REVISION. |                 |                 |                    |           |             |             |         |

- DOCUMENT REFERENCE:
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]
  2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E  
SDDF # IEEE 7.131-5000D  
SDDF # IEEE 7.131-5000B
  3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 33-2-C7
  4. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028
  5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P
  6. EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.  
4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.  
5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|----------------------------------------------------------------|-------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                |             | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                |             |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                     | 2CMS*LT11B  | OP.TIME:                                   | 100 DAYS           | >100DA [R2]        | 3                  | 2,6       | TEST-SIM       | YES            |         |
| SPEC NO.:                                                      | C071M       | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                                        | CONTAINMENT | NORMAL                                     | 104/85             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| ATMOSPHERE MONITORING<br>SYSTEM                                |             | ABNORMAL                                   | 9%                 | 120                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                            |             | ACCIDENT                                   | 190[R2]            | 318                | 1                  | 2         | TEST-SIM       | YES            |         |
| LEVEL TRANSMITTER                                              |             | PRESS(PSIG):                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                |             | NORMAL                                     | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |             | ABNORMAL                                   | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: ROSEMOUNT                                        |             | ACCIDENT                                   | 2.8                | 73                 | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                |             | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                                                     | 1153DB4     | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |             | ABNORMAL                                   | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                                         |             | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| TRANSMIT SUPPRESSION POOL<br>LEVEL                             |             | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                |             | NORM GAMMA                                 | 5.5E6              |                    | 1                  |           |                | NA             | NOTE 5  |
|                                                                |             | ACC GAMMA                                  | 8.5E6              | 2.2E7              | 5                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: A                                                    |             | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                |             | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            | NOTE 3  |
|                                                                |             | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                |             | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - - NOTE 4                                            |             | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: 0.25% CALIB SPAN                                         |             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: 3.6% CALIB SPAN                                          |             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                      | SC175105    |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                   | NA          |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                         | NA          |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE (OR) SPRAY             |             |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |             |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                                           |             |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                                   |             |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                           |             |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 20                                                    |             |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                                                 |             |                                            |                    |                    |                    |           |                |                |         |
|                                                                |             |                                            |                    |                    |                    |           |                |                |         |
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|                                                                |             |                                            |                    |                    |                    |           |                |                |         |
|                                                                |             |                                            |                    |                    |                    |           |                |                |         |
|                                                                |             |                                            |                    |                    |                    |           |                |                |         |
|                                                                |             |                                            |                    |                    |                    |           |                |                |         |
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|                                                                |             |                                            |                    |                    |                    |           |                |                |         |
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## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       |             | PARAMETER   |           | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD  | MARGIN DEMO | REMARKS |
|-------------------------------------------------------------|-------------|-------------|-----------|-----------------|-----------------|--------------------|-----------|--------------|-------------|---------|
|                                                             |             |             |           |                 |                 | SPECIFIED          | QUALIFIED |              |             |         |
| EQUIP NO.:                                                  | 2CMS*PT1A   | OP.TIME:    | 100 DAYS  | >100DA [R2]     |                 | 3                  | 2,6       | TEST-SIM[R2] | YES         |         |
| SPEC NO.:                                                   | C071M       | TEMP (F):   |           |                 |                 |                    |           |              |             | NOTE 1  |
| SYSTEM:                                                     | CONTAINMENT | NORMAL      | 104/95    | 120             |                 | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 2  |
| ATMOSPHERE MONITORING SYSTEM                                |             | ABNORMAL    | 119 [R2]  | 203 [R2]        |                 | 1                  | 2,4       | AN + DATA    | NA          |         |
| TYPE: (DESCRIPTION)                                         |             | ACCIDENT    | 200 [R2]  | 318             |                 | 1                  | 2         | TEST-SIM[R2] | YES         |         |
| PRESSURE TRANSMITTER                                        |             | PRESS(PSIG) |           |                 |                 |                    |           |              |             | NOTE 1  |
|                                                             |             | NORMAL      | -.25"W.G. | ATM             |                 | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                                             |             | ABNORMAL    | -.25"W.G. | ATM             |                 | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| MANUFACTURER: ROSEMOUNT                                     |             | ACCIDENT    | 2.8       | 73              |                 | 1                  | 2         | TEST-SIM[R2] | YES         |         |
|                                                             |             | RH (%):     |           |                 |                 |                    |           |              |             | NOTE 1  |
| MODEL NO.:                                                  | 1153GB5     | NORMAL      | 50        | 95              |                 | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                                             |             | ABNORMAL    | 50        | 95              |                 | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| SAFETY FUNCTION: - - -                                      |             | ACCIDENT    | 100       | 100             |                 | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| TRANSMIT CONTAINMENT DRYWELL PRESS                          |             | RADIATION:  |           |                 |                 |                    |           |              |             | NOTE 1  |
|                                                             |             | NORM GAMMA  | 9.0E6     |                 |                 | 1                  |           |              | NA          | NOTE 5  |
|                                                             |             | ACC GAMMA   | 6.19E5    | 2.2E7           |                 | 5                  | 2         | TEST-SIM[R2] | YES         |         |
| OP. CODE: A                                                 |             | NORM BETA   | NA        |                 |                 | 1                  |           |              | NA          |         |
|                                                             |             | ACC BETA    | 6.1E6     |                 |                 | 1                  |           |              | YES         | NOTE 3  |
|                                                             |             | NEUTRON     | NA        |                 |                 | 1                  |           |              | NA          |         |
|                                                             |             | SPRAY       | NA        | YES             |                 | NA                 | 2         | TEST-SIM[R2] | NA          |         |
| ACCURACY - - NOTE 4                                         |             | SUBMERGENCE | NA        | NA              |                 | NA                 | NA        | NA           | NA          |         |
| SPEC: 0.25% CALIB SPAN                                      |             |             |           |                 |                 |                    |           |              |             |         |
| DEMO: 6.0% CALIB SPAN                                       |             |             |           |                 |                 |                    |           |              |             |         |
| ZONE NO.:                                                   | SC289155    |             |           |                 |                 |                    |           |              |             |         |
| SUBMERGENCE:                                                | NA          |             |           |                 |                 |                    |           |              |             |         |
| SPRAY:                                                      | NA          |             |           |                 |                 |                    |           |              |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY             |             |             |           |                 |                 |                    |           |              |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |             |             |           |                 |                 |                    |           |              |             |         |
| MAINT/SURVEILL - - -                                        |             |             |           |                 |                 |                    |           |              |             |         |
| REFERENCE: 2                                                |             |             |           |                 |                 |                    |           |              |             |         |
| QUALIFIED LIFE - - -                                        |             |             |           |                 |                 |                    |           |              |             |         |
| (YEARS): 20                                                 |             |             |           |                 |                 |                    |           |              |             |         |
| REFERENCE: 2,4                                              |             |             |           |                 |                 |                    |           |              |             |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.

4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.

5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                           |             | PARAMETER                                                                                   |                                                                                                                                                                                                                                                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |             | QUAL METHOD | MARGIN DEMO | REMARKS |
|-------------------------------------------------|-------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-------------|-------------|-------------|---------|
| EQUIP NO.:                                      | 2CMS*PT1B   | OP.TIME:                                                                                    | 100 DAYS                                                                                                                                                                                                                                                         | >100DA [R2]     | 3               | 2,6                | TEST-SIMCR2 | YES         |             |         |
| SPEC NO.:                                       | C071M       | TEMP (F):                                                                                   | NORMAL                                                                                                                                                                                                                                                           | 104/95          | 120             | 1                  | 2           | TEST-SIMCR2 | NA          | NOTE 1  |
| SYSTEM:                                         | CONTAINMENT | ABNORMAL                                                                                    | 119 [R2]                                                                                                                                                                                                                                                         | 203 [R2]        | 1               | 2,4                | AN + DATA   | NA          |             | NOTE 2  |
| ATMOSPHERE MONITORING SYSTEM                    |             | ACCIDENT                                                                                    | 200 [R2]                                                                                                                                                                                                                                                         | 318             | 1               | 2                  | TEST-SIMCR2 | YES         |             |         |
| TYPE: (DESCRIPTION)                             |             | PRESS (PSIG)                                                                                | NORMAL                                                                                                                                                                                                                                                           | -.25"W.G.       | ATM             | 1                  | 2           | TEST-SIMCR2 | NA          | NOTE 1  |
| PRESSURE TRANSMITTER                            |             | ABNORMAL                                                                                    | -.25"W.G.                                                                                                                                                                                                                                                        | ATM             | 1               | 2                  | TEST-SIMCR2 | NA          |             |         |
| MANUFACTURER: ROSEMOUNT                         |             | ACCIDENT                                                                                    | 2.8                                                                                                                                                                                                                                                              | 73              | 1               | 2                  | TEST-SIMCR2 | YES         |             |         |
| MODEL NO.:                                      | 1153GB5     | RH (%):                                                                                     | NORMAL                                                                                                                                                                                                                                                           | 50              | 95              | 1                  | 2           | TEST-SIMCR2 | NA          | NOTE 1  |
| SAFETY FUNCTION: - - -                          |             | ABNORMAL                                                                                    | 50                                                                                                                                                                                                                                                               | 95              | 1               | 2                  | TEST-SIMCR2 | NA          |             |         |
| TRANSMIT CONTAINMENT DRYWELL PRESS              |             | ACCIDENT                                                                                    | 100                                                                                                                                                                                                                                                              | 100             | 1               | 2                  | TEST-SIMCR2 | NA          |             |         |
| OP. CODE: A                                     |             | RADIATION:                                                                                  | NORM GAMMA                                                                                                                                                                                                                                                       | 9.0E5           |                 | 1                  |             |             | NA          | NOTE 1  |
|                                                 |             | ACC GAMMA                                                                                   | 1.63E6                                                                                                                                                                                                                                                           | 2.2E7           | 5               | 2                  | TEST-SIMCR2 | YES         |             | NOTE 5  |
|                                                 |             | NORM BETA                                                                                   | NA                                                                                                                                                                                                                                                               |                 | 1               |                    |             |             | NA          |         |
|                                                 |             | ACC BETA                                                                                    | 6.1E6                                                                                                                                                                                                                                                            |                 | 1               |                    |             |             | YES         | NOTE 3  |
|                                                 |             | NEUTRON                                                                                     | NA                                                                                                                                                                                                                                                               |                 | 1               |                    |             |             | NA          |         |
|                                                 |             | SPRAY                                                                                       | NA                                                                                                                                                                                                                                                               | YES             | NA              | 2                  | TEST-SIMCR2 | NA          |             |         |
| ACCURACY - - NOTE 4                             |             | SUBMERGENCE                                                                                 | NA                                                                                                                                                                                                                                                               | NA              | NA              | NA                 | NA          | NA          | NA          |         |
| SPEC: 0.25% CALIB SPAN                          |             |                                                                                             |                                                                                                                                                                                                                                                                  |                 |                 |                    |             |             |             |         |
| DEMO: 6.0% CALIB SPAN                           |             |                                                                                             |                                                                                                                                                                                                                                                                  |                 |                 |                    |             |             |             |         |
| ZONE NO.:                                       | SC289155    |                                                                                             |                                                                                                                                                                                                                                                                  |                 |                 |                    |             |             |             |         |
| SUBMERGENCE:                                    | NA          | DOCUMENT REFERENCE:                                                                         | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                     |                 |                 |                    |             |             |             |         |
| SPRAY:                                          | NA          | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2] | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                           |                 |                 |                    |             |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY |             | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E                       | 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.                                                                                                                                                                                     |                 |                 |                    |             |             |             |         |
|                                                 |             | SDDF # IEEE 7.131-5000D                                                                     |                                                                                                                                                                                                                                                                  |                 |                 |                    |             |             |             |         |
|                                                 |             | SDDF # IEEE 7.131-5000B                                                                     |                                                                                                                                                                                                                                                                  |                 |                 |                    |             |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                    |             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 33-2-C1                                  | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION. |                 |                 |                    |             |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                  |             | 4. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028                                    | 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.                                                                                                                                                                                  |                 |                 |                    |             |             |             |         |
| MAINT/SURVEILL - - -                            |             | 5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P                                 |                                                                                                                                                                                                                                                                  |                 |                 |                    |             |             |             |         |
| REFERENCE: 2                                    |             | 6. EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005                             |                                                                                                                                                                                                                                                                  |                 |                 |                    |             |             |             |         |
| QUALIFIED LIFE - - -                            |             |                                                                                             |                                                                                                                                                                                                                                                                  |                 |                 |                    |             |             |             |         |
| (YEARS): 20                                     |             |                                                                                             |                                                                                                                                                                                                                                                                  |                 |                 |                    |             |             |             |         |
| REFERENCE: 2,4                                  |             |                                                                                             |                                                                                                                                                                                                                                                                  |                 |                 |                    |             |             |             |         |
|                                                 |             | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                               |                                                                                                                                                                                                                                                                  |                 |                 |                    |             |             |             |         |



### ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[R2] INDICATES CHANGES MADE IN THIS REVISION.





18-Feb-86

QUAL REF #\_C071MAJ\_\_\_\_ REV 2

| EQUIPMENT DESCRIPTION          |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|--------------------------------|-------------|-------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                |             | PARAMETER                                       | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                                          |
|                                |             |                                                 |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                                                  |
| EQUIP NO.:                     | 2CMS*PT2B   | OP.TIME:                                        | 100 DAYS        | >100DA [R2]     | 3                  | 2,6       | TEST-SIMCR2 | YES         |                                                                                                                                                                                                                                                                  |
| SPEC NO.:                      | C071M       | TEMP (F):                                       |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| SYSTEM:                        | CONTAINMENT | NORMAL                                          | 104/85          | 120             | 1                  | 2         | TEST-SIMCR2 | NA          | NOTE 1                                                                                                                                                                                                                                                           |
| ATMOSPHERE MONITORING          |             | ABNORMAL                                        | 87              | 120             | 1                  | 2         | TEST-SIMCR2 | NA          | NOTE 2                                                                                                                                                                                                                                                           |
| SYSTEM                         |             | ACCIDENT                                        | 200             | 318             | 1                  | 2         | TEST-SIMCR2 | YES         |                                                                                                                                                                                                                                                                  |
| TYPE: (DESCRIPTION)            |             | PRESS(PSIG)                                     |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
| PRESSURE TRANSMITTER           |             | NORMAL                                          | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
|                                |             | ABNORMAL                                        | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
| MANUFACTURER: ROSEMOUNT        |             | ACCIDENT                                        | 2.8             | 73              | 1                  | 2         | TEST-SIMCR2 | YES         |                                                                                                                                                                                                                                                                  |
|                                |             | RH (%)                                          |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
| MODEL NO.:                     | 1153GB7     | NORMAL                                          | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
|                                |             | ABNORMAL                                        | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
| SAFETY FUNCTION: - - -         |             | ACCIDENT                                        | 100             | 100             | 1                  | 2         | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
| TRANSMIT CONTAINMENT DRYWELL   |             | RADIATION:                                      |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
| PRESS                          |             | NORM GAMMA                                      | 3.96E6          |                 | 1                  |           |             | NA          | NOTE 5                                                                                                                                                                                                                                                           |
|                                |             | ACC GAMMA                                       | 7.3E5           | 2.2E7           | 5                  | 2         | TEST-SIMCR2 | YES         |                                                                                                                                                                                                                                                                  |
| OP. CODE: A                    |             | NORM BETA                                       | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                                                  |
|                                |             | ACC BETA                                        | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3                                                                                                                                                                                                                                                           |
|                                |             | NEUTRON                                         | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                                                  |
|                                |             | SPRAY                                           | NA              | YES             | NA                 | 2         | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
| ACCURACY - - NOTE 4            |             | SUBMERGENCE                                     | NA              | NA              | NA                 | NA        |             | NA          |                                                                                                                                                                                                                                                                  |
| SPEC: 0.25% CALIB SPAN         |             |                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| DEMO: 4.8% CALIB SPAN          |             |                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| ZONE NO.:                      | SC261145    |                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| SUBMERGENCE:                   | NA          | DOCUMENT REFERENCE:                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| SPRAY:                         | NA          | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                     |
|                                |             | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]     |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                           |
| EQUIPMENT NOT SUBJECT TO       |             | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                 |                 |                    |           |             |             | 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.                                                                                                                                                                                     |
| SUBMERGENCE (OR) SPRAY         |             | SDDF # IEEE 7.131-5000E                         |                 |                 |                    |           |             |             | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION. |
|                                |             | SDDF # IEEE 7.131-5000D                         |                 |                 |                    |           |             |             | 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.                                                                                                                                                                                  |
|                                |             | SDDF # IEEE 7.131-5000B                         |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| DOCUMENTATION ACCEPTABILITY:   |             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| ACCEPTABLE TO NUREG 0588,CAT I |             | FILE NO. 33-2-C2                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                |             | 4. EXTENDED QUALIFIED LIFE CALCULATION          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                |             | NO. 12177-EQS-028                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| MAINT/SURVEILL - - -           |             | 5. CASE SPECIFIC RADIATION CALCULATION          |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| REFERENCE: 2                   |             | NO. 12177-PR(C)-22-P                            |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                |             | 6. EXTENDING POST ACCIDENT PERIOD CALCULATION   |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                |             | NO. 12177-EQS-005                               |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| QUALIFIED LIFE - - -           |             |                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| (YEARS): 20                    |             |                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| REFERENCE: 2,4                 |             |                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                |             | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |



QUAL REF #\_C071MAK\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|--------------------------------|------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |                  | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |                  |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                     | 2CMS*PT7A        | OP. TIME:                                  | 100 DAYS        | >100DA [R2]     | 3                  | 2,6       | TEST-SIM    | YES         |         |
| SPEC NO.:                      | C071M            | TEMP (F):                                  |                 |                 |                    |           |             |             |         |
| SYSTEM:                        | CONTAINMENT      | NORMAL                                     | 104/88          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
| ATMOSPHERE MONITORING          |                  | ABNORMAL                                   | 94              | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
| SYSTEM                         |                  | ACCIDENT                                   | 175             | 318             | 1                  | 2         | TEST-SIM    | YES         |         |
| TYPE: (DESCRIPTION)            |                  | PRESS (PSIG)                               |                 |                 |                    |           |             |             |         |
| PRESSURE TRANSMITTER           |                  | NORMAL                                     | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
|                                |                  | ABNORMAL                                   | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: ROSEMOUNT        |                  | ACCIDENT                                   | 2.8             | 73              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                |                  | RH (%)                                     |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                     | 1153GB7          | NORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |                  | ABNORMAL                                   | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -         |                  | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| TRANSMIT SUPPRESSION CHAMBER   |                  | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1  |
| PRESS                          |                  | NORM GAMMA                                 | 2.55E5          |                 | 1                  |           |             | NA          | NOTE 5  |
|                                |                  | ACC GAMMA                                  | 5.0E5           | 2.2E7           | 5                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE: A                    |                  | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                |                  | ACC BETA                                   | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3  |
|                                |                  | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                |                  | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY - -                   | NOTE 4           | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                          | 0.25% CALIB SPAN |                                            |                 |                 |                    |           |             |             |         |
| DEMO:                          | 4.5% CALIB SPAN  |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.:                      | SC240135         |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                   | NA               |                                            |                 |                 |                    |           |             |             |         |
| SPRAY:                         | NA               |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE (OR) SPRAY         |                  |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT 1 |                  |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |                  |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |                  |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |                  |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 20                    |                  |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                 |                  |                                            |                 |                 |                    |           |             |             |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E  
SDDF # IEEE 7.131-5000D  
SDDF # IEEE 7.131-5000B
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 33-2-C4
- EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028
- CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P
- EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005

NOTES:

- FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
- NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
- THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.
- SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.
- THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



18-Feb-86

QUAL REF #\_C071MAL\_\_\_\_ REV 2

| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------|------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |                  | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                  |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2CMS*PT7B        | OP.TIME:                                   | 100 DAYS           | >100DA [R2]        | 3                  | 2,6       | TEST-SIMCR2    | YES            |         |
| SPEC NO.:                      | C071M            | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                        | CONTAINMENT      | NORMAL                                     | 104/85             | 120                | 1                  | 2         | TEST-SIMCR2    | NA             | NOTE 1  |
| ATMOSPHERE MONITORING          |                  | ABNORMAL                                   | 87                 | 120                | 1                  | 2         | TEST-SIMCR2    | NA             | NOTE 2  |
| SYSTEM                         |                  | ACCIDENT                                   | 200                | 318                | 1                  | 2         | TEST-SIMCR2    | YES            |         |
| TYPE: (DESCRIPTION)            |                  | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
| PRESSURE TRANSMITTER           |                  | NORMAL                                     | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
|                                |                  | ABNORMAL                                   | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| MANUFACTURER: ROSEMOUNT        |                  | ACCIDENT                                   | 2.8                | 73                 | 1                  | 2         | TEST-SIMCR2    | YES            |         |
|                                |                  | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                     | 1153GB7          | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIMCR2    | NA             |         |
|                                |                  | ABNORMAL                                   | 50                 | 95                 | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| SAFETY FUNCTION: - - -         |                  | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| TRANSMIT SUPPRESSION CHAMBER   |                  | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| PRESS                          |                  | NORM GAMMA                                 | 3.96E6             |                    | 1                  |           |                | NA             | NOTE 5  |
|                                |                  | ACC GAMMA                                  | 7.29E5             | 2.2E7              | 5                  | 2         | TEST-SIMCR2    | YES            |         |
| OP. CODE: A                    |                  | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                  | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            | NOTE 3  |
|                                |                  | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                  | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIMCR2    | NA             |         |
| ACCURACY - -                   | NOTE 4           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                          | 0.25% CALIB SPAN |                                            |                    |                    |                    |           |                |                |         |
| DEMO:                          | 4.8% CALIB SPAN  |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | SC261145         |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA               |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                         | NA               |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE (OR) SPRAY         |                  |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                  |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                  |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                  |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 20                    |                  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                 |                  |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E  
SDDF # IEEE 7.131-5000D  
SDDF # IEEE 7.131-5000B
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 33-2-C4
- EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028
- CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P
- EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.  
4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.  
5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



QUAL REF #\_C071MAM\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |              |             |         |
|--------------------------------|------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|--------------|-------------|---------|
|                                |                  | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD  | MARGIN DEMO | REMARKS |
|                                |                  |                                            |                 |                 | SPECIFIED          | QUALIFIED |              |             |         |
| EQUIP NO.:                     | 2IAS*PT181       | OP.TIME:                                   | 100 DAYS        | >100DA [R2]     | 3                  | 2,6       | TEST-SIM[R2] | YES         |         |
| SPEC NO.:                      | C071M            | TEMP (F):                                  |                 |                 |                    |           |              |             |         |
| SYSTEM:                        | INSTRUMENT       | NORMAL                                     | 104/95          | 120             | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 1  |
|                                | AIR SYSTEM       | ABNORMAL                                   | 119 [R2]        | 203 [R2]        | 1                  | 2,4       | AN + DATA    | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)            |                  | ACCIDENT                                   | 200 [R2]        | 318             | 1                  | 2         | TEST-SIM[R2] | YES         |         |
| PRESSURE TRANSMITTER           |                  | PRESS(PSIG)                                |                 |                 |                    |           |              |             | NOTE 1  |
|                                |                  | NORMAL                                     | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                |                  | ABNORMAL                                   | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| MANUFACTURER:                  | ROSEMOUNT        | ACCIDENT                                   | 2.8             | 73              | 1                  | 2         | TEST-SIM[R2] | YES         |         |
|                                |                  | RH (%)                                     |                 |                 |                    |           |              |             | NOTE 1  |
| MODEL NO.:                     | 1153GB8          | NORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                |                  | ABNORMAL                                   | 50              | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| SAFETY FUNCTION:               | - - -            | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| TRANSMIT ADS HEADER A          |                  | RADIATION:                                 |                 |                 |                    |           |              |             | NOTE 1  |
| PRESSURE                       |                  | NORM GAMMA                                 | 9.0E5           |                 | 1                  |           |              | NA          | NOTE 5  |
|                                |                  | ACC GAMMA                                  | 6.1E5           | 2.2E7           | 5                  | 2         | TEST-SIM[R2] | YES         |         |
| OP. CODE:                      | A                | NORM BETA                                  | NA              |                 | 1                  |           |              | NA          |         |
|                                |                  | ACC BETA                                   | 6.1E6           |                 | 1                  |           |              | YES         | NOTE 3  |
|                                |                  | NEUTRON                                    | NA              |                 | 1                  |           |              | NA          |         |
|                                |                  | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIM[R2] | NA          |         |
| ACCURACY - -                   | NOTE 4           | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA           | NA          |         |
| SPEC:                          | 0.25% CALIB SPAN |                                            |                 |                 |                    |           |              |             |         |
| DEMO:                          | 8.8% CALIB SPAN  |                                            |                 |                 |                    |           |              |             |         |
| ZONE NO.:                      | SC289155         |                                            |                 |                 |                    |           |              |             |         |
| SUBMERGENCE:                   | NA               |                                            |                 |                 |                    |           |              |             |         |
| SPRAY:                         | NA               |                                            |                 |                 |                    |           |              |             |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                            |                 |                 |                    |           |              |             |         |
| SUBMERGENCE (OR) SPRAY         |                  |                                            |                 |                 |                    |           |              |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                            |                 |                 |                    |           |              |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                  |                                            |                 |                 |                    |           |              |             |         |
| MAINT/SURVEILL - - -           |                  |                                            |                 |                 |                    |           |              |             |         |
| REFERENCE: 2                   |                  |                                            |                 |                 |                    |           |              |             |         |
| QUALIFIED LIFE - - -           |                  |                                            |                 |                 |                    |           |              |             |         |
| (YEARS): 20                    |                  |                                            |                 |                 |                    |           |              |             |         |
| REFERENCE: 2,4                 |                  |                                            |                 |                 |                    |           |              |             |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EGEDC-1, REV 3, DEC 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E  
SDDF # IEEE 7.131-5000D  
SDDF # IEEE 7.131-5000B
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 12-C-36
- EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028
- CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P
- EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.  
4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.  
5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





QUAL REF #\_C071MAN\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION          |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------|-------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |             | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |             |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2IAS*PT186  |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.:                      | C071M       | OP.TIME:                                   | 100 DAYS           | >100DA [R2]        | 3                  | 2,6       | TEST-SIMCR2    | YES            |         |
| SYSTEM:                        | CONTAINMENT | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| ATMOSPHERE MONITORING          |             | NORMAL                                     | 104/95             | 120                | 1                  | 2         | TEST-SIMCR2    | NA             | NOTE 2  |
| SYSTEM                         |             | ABNORMAL                                   | 119 [R2]           | 203 [R2]           | 1                  | 2,4       | AN + DATA      | NA             |         |
| TYPE: (DESCRIPTION)            |             | ACCIDENT                                   | 200 [R2]           | 318                | 1                  | 2         | TEST-SIMCR2    | YES            |         |
| PRESSURE TRANSMITTER           |             | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                |             | NORMAL                                     | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
|                                |             | ABNORMAL                                   | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| MANUFACTURER: ROSEMOUNT        |             | ACCIDENT                                   | 2.8                | 73                 | 1                  | 2         | TEST-SIMCR2    | YES            |         |
|                                |             | RH (%)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                     | 1153688     | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIMCR2    | NA             |         |
|                                |             | ABNORMAL                                   | 50                 | 95                 | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| SAFETY FUNCTION: - - -         |             | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| TRANSMIT ADS HEADER B          |             | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| PRESSURE                       |             | NORM GAMMA                                 | 9.0E5              |                    | 1                  |           |                | NA             | NOTE 5  |
|                                |             | ACC GAMMA                                  | 6.19E5             | 2.2E7              | 5                  | 2         | TEST-SIMCR2    | YES            |         |
| OP. CODE: A                    |             | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                |             | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            | NOTE 3  |
|                                |             | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                |             | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIMCR2    | NA             |         |
| ACCURACY - - NOTE 4            |             | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: 0.25% CALIB SPAN         |             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: 8.8% CALIB SPAN          |             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | SC289155    |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA          |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                         | NA          |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |             |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE (OR) SPRAY         |             |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |             |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |             |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |             |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |             |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |             |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 20                    |             |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                 |             |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E  
SDDF # IEEE 7.131-5000D  
SDDF # IEEE 7.131-5000B
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 12-1-C38
- EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028
- CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P
- EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.  
4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.  
5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



QUAL REF #\_C071MAO\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|--------------------------------|------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |                  | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |                  |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                     | 2IAS*PT230       | OP.TIME:                                   | 100 DAYS        | >100DA [R2]     | 3                  | 2,6       | TEST-SIMCR2 | YES         |         |
| SPEC NO.:                      | C071M            | TEMP (F):                                  |                 |                 |                    |           |             |             |         |
| SYSTEM:                        | INSTRUMENT       | NORMAL                                     | 104/95          | 120             | 1                  | 2         | TEST-SIMCR2 | NA          | NOTE 1  |
|                                | AIR SYSTEM       | ABNORMAL                                   | 119 [R2]        | 203 [R2]        | 1                  | 2,4       | AN + DATA   | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)            |                  | ACCIDENT                                   | 200 [R2]        | 318             | 1                  | 2         | TEST-SIMCR2 | YES         |         |
| PRESSURE TRANSMITTER           |                  | PRESS(PSIG)                                |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                  | NORMAL                                     | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
|                                |                  | ABNORMAL                                   | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| MANUFACTURER:                  | ROSEMOUNT        | ACCIDENT                                   | 2.8             | 73              | 1                  | 2         | TEST-SIMCR2 | YES         |         |
| MODEL NO.:                     | 1153GB7PA        | RH (%)                                     |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                  | NORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |         |
|                                |                  | ABNORMAL                                   | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| SAFETY FUNCTION:               | - - -            | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| TRANSMIT ADS ACCUMULATOR TK32  |                  | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                  | NORM GAMMA                                 | 9.0E5           |                 | 1                  |           |             | NA          | NOTE 5  |
|                                |                  | ACC GAMMA                                  | 9.5E5           | 2.2E7           | 5                  | 2         | TEST-SIMCR2 | YES         |         |
| OP. CODE:                      | A                | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                |                  | ACC BETA                                   | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3  |
|                                |                  | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                |                  | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIMCR2 | NA          |         |
| ACCURACY - -                   | NOTE 4           | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                          | 0.25% CALIB SPAN |                                            |                 |                 |                    |           |             |             |         |
| DEMO:                          | 2.3% CALIB SPAN  |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.:                      | SC289155         |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                   | NA               |                                            |                 |                 |                    |           |             |             |         |
| SPRAY:                         | NA               |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE (OR) SPRAY         |                  |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                  |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |                  |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |                  |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |                  |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 20                    |                  |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                 |                  |                                            |                 |                 |                    |           |             |             |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E  
SDDF # IEEE 7.131-5000D  
SDDF # IEEE 7.131-5000B
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 12-1-CS7
- EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028
- CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P
- EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.  
4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.  
5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



18-Feb-86

QUAL REF #\_C071MAP\_\_\_\_ REV 2

| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
|--------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |                  | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2IAS*PT231       | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 100 DAYS           | >100DA [R2]        | 3                  | 2,6       | TEST-SIM[R2]   | YES            |         |
| SPEC NO.:                      | C071M            | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                        | INSTRUMENT       | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 104/95             | 120                | 1                  | 2         | TEST-SIM[R2]   | NA             | NOTE 2  |
|                                | AIR SYSTEM       | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 119 [R2]           | 203 [R2]           | 1                  | 2,4       | AN + DATA      | NA             |         |
| TYPE: (DESCRIPTION)            |                  | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 200 [R2]           | 318                | 1                  | 2         | TEST-SIM[R2]   | YES            |         |
| PRESSURE TRANSMITTER           |                  | PRESS(PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                |                  | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
|                                |                  | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
| MANUFACTURER:                  | ROSEMOUNT        | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2.8                | 73                 | 1                  | 2         | TEST-SIM[R2]   | YES            |         |
|                                |                  | RH (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                     | 1153GB7PA        | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 50                 | 95                 | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
|                                |                  | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 50                 | 95                 | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
| SAFETY FUNCTION:               | - - -            | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 100                | 100                | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
| TRANSMIT ADS ACCUMULATOR TK33  |                  | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                |                  | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 9.0E5              |                    | 1                  |           |                | NA             | NOTE 5  |
|                                |                  | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 8.5E5              | 2.2E7              | 5                  | 2         | TEST-SIM[R2]   | YES            |         |
| OP. CODE:                      | A                | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                  | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 6.1E6              |                    | 1                  |           |                | YES            | NOTE 3  |
|                                |                  | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                  | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NA                 | YES                | NA                 | 2         | TEST-SIM[R2]   | NA             |         |
| ACCURACY - -                   | NOTE 4           | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                          | 0.25% CALIB SPAN |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| DEMO:                          | 2.3% CALIB SPAN  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | SC289155         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| SPRAY:                         | NA               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| SUBMERGENCE (OR) SPRAY         |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| (YEARS): 20                    |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                 |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
|                                |                  | <p>DOCUMENT REFERENCE:</p> <p>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]</p> <p>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E<br/>SDDF # IEEE 7.131-5000D<br/>SDDF # IEEE 7.131-5000B</p> <p>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 12-1-C37</p> <p>4. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028</p> <p>5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P</p> <p>6. EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005</p>                                                      |                    |                    |                    |           |                |                |         |
|                                |                  | <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.</p> <p>3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.</p> <p>4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.</p> <p>5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.</p> |                    |                    |                    |           |                |                |         |
|                                |                  | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                    |                    |           |                |                |         |



| EQUIPMENT DESCRIPTION          |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|--------------------------------|------------|---------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                |            | PARAMETER                                                                                   | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                          |
|                                |            |                                                                                             |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                  |
| EQUIP NO.:                     | 2IAS*PT232 | OP.TIME:                                                                                    | 100 DAYS           | >100DA [R2]        | 3                  | 2,6       | TEST-SIM[R2]   | YES            |                                                                                                                                                                                                                                                                  |
| SPEC NO.:                      | C071M      | TEMP (F):                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                           |
| SYSTEM:                        | INSTRUMENT | NORMAL                                                                                      | 104/95             | 120                | 1                  | 2         | TEST-SIM[R2]   | NA             | NOTE 2                                                                                                                                                                                                                                                           |
|                                | AIR SYSTEM | ABNORMAL                                                                                    | 119 [R2]           | 203 [R2]           | 1                  | 2,4       | AN + DATA      | NA             |                                                                                                                                                                                                                                                                  |
| TYPE: (DESCRIPTION)            |            | ACCIDENT                                                                                    | 200 [R2]           | 318                | 1                  | 2         | TEST-SIM[R2]   | YES            |                                                                                                                                                                                                                                                                  |
| PRESSURE TRANSMITTER           |            | PRESS (PSIG)                                                                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                           |
|                                |            | NORMAL                                                                                      | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIM[R2]   | NA             |                                                                                                                                                                                                                                                                  |
|                                |            | ABNORMAL                                                                                    | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIM[R2]   | NA             |                                                                                                                                                                                                                                                                  |
| MANUFACTURER: ROSEMOUNT        |            | ACCIDENT                                                                                    | 2.8                | 73                 | 1                  | 2         | TEST-SIM[R2]   | YES            |                                                                                                                                                                                                                                                                  |
|                                |            | RH (%)                                                                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                           |
| MODEL NO.:                     | 1153GB7PA  | NORMAL                                                                                      | 50                 | 95                 | 1                  | 2         | TEST-SIM[R2]   | NA             |                                                                                                                                                                                                                                                                  |
|                                |            | ABNORMAL                                                                                    | 50                 | 95                 | 1                  | 2         | TEST-SIM[R2]   | NA             |                                                                                                                                                                                                                                                                  |
| SAFETY FUNCTION: - - -         |            | ACCIDENT                                                                                    | 100                | 100                | 1                  | 2         | TEST-SIM[R2]   | NA             |                                                                                                                                                                                                                                                                  |
| TRANSMIT ADS ACCUMULATOR TK34  |            | RADIATION:                                                                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                           |
|                                |            | NORM GAMMA                                                                                  | 9.0E5              |                    | 1                  |           |                | NA             | NOTE 5                                                                                                                                                                                                                                                           |
|                                |            | ACC GAMMA                                                                                   | 7.1E5              | 2.2E7              | 5                  | 2         | TEST-SIM[R2]   | YES            |                                                                                                                                                                                                                                                                  |
| OP. CODE: A                    |            | NORM BETA                                                                                   | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                                                  |
|                                |            | ACC BETA                                                                                    | 6.1E6              |                    | 1                  |           |                | YES            | NOTE 3                                                                                                                                                                                                                                                           |
|                                |            | NEUTRON                                                                                     | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                                                  |
|                                |            | SPRAY                                                                                       | NA                 | YES                | NA                 | 2         | TEST-SIM[R2]   | NA             |                                                                                                                                                                                                                                                                  |
| ACCURACY - - NOTE 4            |            | SUBMERGENCE                                                                                 | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                  |
| SPEC: 0.25% CALIB SPAN         |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| DEMO: 2.3% CALIB SPAN          |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| ZONE NO.:                      | SC289155   |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| SUBMERGENCE:                   | NA         | DOCUMENT REFERENCE:                                                                         |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                     |
| SPRAY:                         | NA         | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2] |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                           |
| EQUIPMENT NOT SUBJECT TO       |            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E                       |                    |                    |                    |           |                |                | 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.                                                                                                                                                                                     |
| SUBMERGENCE (OR) SPRAY         |            | SDDF # IEEE 7.131-5000D                                                                     |                    |                    |                    |           |                |                | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION. |
|                                |            | SDDF # IEEE 7.131-5000B                                                                     |                    |                    |                    |           |                |                | 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.                                                                                                                                                                                  |
| DOCUMENTATION ACCEPTABILITY:   |            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 12-1-C37                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| ACCEPTABLE TO NUREG 0588,CAT I |            | 4. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028                                    |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            | 5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| MAINT/SURVEILL - - -           |            | 6. EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| REFERENCE: 2                   |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| QUALIFIED LIFE - - -           |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| (YEARS): 20                    |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| REFERENCE: 2,4                 |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
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|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
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|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
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|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
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|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
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|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                |            |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |





QUAL REF #\_C071MBH\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |              |             |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|--------------|-------------|---------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD  | MARGIN DEMO | REMARKS |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        |                                            |                 |                 | SPECIFIED          | QUALIFIED |              |             |         |
| EQUIP NO.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2RSS*PT102             | OP.TIME:                                   | 100 DAYS        | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIM[R2] | YES         |         |
| SPEC NO.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | C071M                  | TEMP (F):                                  |                 |                 |                    |           |              |             |         |
| SYSTEM:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | REMOTE SHUTDOWN SYSTEM | NORMAL                                     | 104/85          | 120             | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 1  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | ABNORMAL                                   | 87              | 120             | 1                  | 2,4       | TEST-SIM[R2] | NA          | NOTE 2  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | ACCIDENT                                   | 200             | 318             | 1                  | 2         | TEST-SIM[R2] | YES         |         |
| TYPE: (DESCRIPTION)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | PRESSURE TRANSMITTER   | PRESS (PSIG)                               |                 |                 |                    |           |              |             | NOTE 1  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | NORMAL                                     | -.25"WG         | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | ABNORMAL                                   | -.25"WG         | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | ACCIDENT                                   | 2.8             | 73              | 1                  | 2         | TEST-SIM[R2] | YES         |         |
| MANUFACTURER:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ROSEMOUNT              | RH (%)                                     |                 |                 |                    |           |              |             | NOTE 1  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | NORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | ABNORMAL                                   | 50              | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| MODEL NO.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 11536B9PA              | RADIATION:                                 |                 |                 |                    |           |              |             | NOTE 1  |
| SAFETY FUNCTION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | - - -                  | NORM GAMMA                                 | 4E6             |                 | 1                  |           |              | NA          | NOTE 5  |
| TRANSMIT REACTOR VESSEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | LEVEL                  | ACC GAMMA                                  | 1.1E6           | 2.2E7           | 5                  | 2         | TEST-SIM[R2] | YES         |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | NORM BETA                                  | NA              |                 | 1                  |           |              | NA          |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | ACC BETA                                   | 6.1E6           |                 | 1                  |           |              | YES         | NOTE 3  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | NEUTRON                                    | NA              |                 | 1                  |           |              | NA          |         |
| OP. CODE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | A                      | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIM[R2] | NA          |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA           | NA          |         |
| ACCURACY - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NOTE 4                 |                                            |                 |                 |                    |           |              |             |         |
| SPEC:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.25% CALIB SPAN       |                                            |                 |                 |                    |           |              |             |         |
| DEMO:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 4.8% CALIB SPAN        |                                            |                 |                 |                    |           |              |             |         |
| ZONE NO.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SC261145               |                                            |                 |                 |                    |           |              |             |         |
| SUBMERGENCE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NA                     |                                            |                 |                 |                    |           |              |             |         |
| SPRAY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NA                     |                                            |                 |                 |                    |           |              |             |         |
| EQUIPMENT NOT SUBJECT TO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |                                            |                 |                 |                    |           |              |             |         |
| SUBMERGENCE (OR) SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                        |                                            |                 |                 |                    |           |              |             |         |
| DOCUMENTATION ACCEPTABILITY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |                                            |                 |                 |                    |           |              |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                        |                                            |                 |                 |                    |           |              |             |         |
| MAINT/SURVEILL - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |                                            |                 |                 |                    |           |              |             |         |
| REFERENCE: 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |                                            |                 |                 |                    |           |              |             |         |
| QUALIFIED LIFE - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |                                            |                 |                 |                    |           |              |             |         |
| (YEARS): 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |                                            |                 |                 |                    |           |              |             |         |
| REFERENCE: 2,4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                        |                                            |                 |                 |                    |           |              |             |         |
| <p>DOCUMENT REFERENCE:</p> <ol style="list-style-type: none"> <li>EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]</li> <li>VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E<br/>SDDF # IEEE 7.131-5000D<br/>SDDF # IEEE 7.131-5000B</li> <li>EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. RSS-C1</li> <li>EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028</li> <li>CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P</li> <li>EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005</li> </ol> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.<br/>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.<br/>3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.<br/>4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.<br/>5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.</p> |                        |                                            |                 |                 |                    |           |              |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |                                            |                 |                 |                    |           |              |             |         |



18-Feb-86

QUAL REF #\_C071MAR\_\_\_\_ REV 2

| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------|------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |                  | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                  |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2IAS*PT233       | OP.TIME:                                   | 100 DAYS           | >100DA [R2]        | 3                  | 2,5       | TEST-SIMCR2    | YES            |         |
| SPEC NO.:                      | C071M            | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM:                        | INSTRUMENT       | NORMAL                                     | 104/95             | 120                | 1                  | 2         | TEST-SIMCR2    | NA             | NOTE 1  |
|                                | AIR SYSTEM       | ABNORMAL                                   | 119 [R2]           | 203 [R2]           | 1                  | 2,4       | TEST-SIMCR2    | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)            |                  | ACCIDENT                                   | 175                | 318                | 1                  | 2         | TEST-SIMCR2    | YES            |         |
| PRESSURE TRANSMITTER           |                  | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                |                  | NORMAL                                     | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
|                                |                  | ABNORMAL                                   | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| MANUFACTURER:                  | ROSEMOUNT        | ACCIDENT                                   | 2.8                | 73                 | 1                  | 2         | TEST-SIMCR2    | YES            |         |
|                                |                  | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                     | 1153GB7PA        | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIMCR2    | NA             |         |
|                                |                  | ABNORMAL                                   | 50                 | 95                 | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| SAFETY FUNCTION:               | - - -            | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| TRANSMIT ADS ACCUMULATOR TK35  |                  | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                |                  | NORM GAMMA                                 | 5.5E5              |                    | 1                  |           |                | NA             | NOTE 5  |
|                                |                  | ACC GAMMA                                  | 5.0E5              | 2.2E7              | 1                  | 2         | TEST-SIMCR2    | YES            |         |
| OP. CODE:                      | A                | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                  | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            | NOTE 3  |
|                                |                  | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                  | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIMCR2    | NA             |         |
| ACCURACY - -                   | NOTE 4           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                          | 0.25% CALIB SPAN |                                            |                    |                    |                    |           |                |                |         |
| DEMO:                          | 2.3% CALIB SPAN  |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | SC306175         |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA               |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                         | NA               |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE (OR) SPRAY         |                  |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                  |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                  |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                  |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 20                    |                  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                 |                  |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E  
SDDF # IEEE 7.131-5000D  
SDDF # IEEE 7.131-5000B
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 12-1-C37
- EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028
- EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX. DESIGN/AVERAGE.  
3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.  
4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.  
5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



18-Feb-86

QUAL REF #\_C071MAS\_ REV 2

| EQUIPMENT DESCRIPTION          |                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|--------------------------------|-----------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |                       | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |                       |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                     | 2IAS*PT234            | OP.TIME:                                   | 100 DAYS        | >100DA [R2]     | 3                  | 2,5       | TEST-SIMCR2 | YES         |         |
| SPEC NO.:                      | C071M                 | TEMP (F):                                  |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                        | INSTRUMENT AIR SYSTEM | NORMAL                                     | 104/95          | 120             | 1                  | 2         | TEST-SIMCR2 | NA          | NOTE 2  |
|                                |                       | ABNORMAL                                   | 119 [R2]        | 203 [R2]        | 1                  | 2,4       | AN + DATA   | NA          |         |
| TYPE: (DESCRIPTION)            |                       | ACCIDENT                                   | 175             | 318             | 1                  | 2         | TEST-SIMCR2 | YES         |         |
| PRESSURE TRANSMITTER           |                       | PRESS (PSIG)                               |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                       | NORMAL                                     | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
|                                |                       | ABNORMAL                                   | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| MANUFACTURER:                  | ROSEMOUNT             | ACCIDENT                                   | 2.8             | 73              | 1                  | 2         | TEST-SIMCR2 | YES         |         |
|                                |                       | RH (%):                                    |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                     | 1153GB7PA             | NORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |         |
|                                |                       | ABNORMAL                                   | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| SAFETY FUNCTION:               |                       | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| TRANSMIT ADS ACCUMULATOR TK36  |                       | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                       | NORM GAMMA                                 | 5.5E5           |                 | 1                  |           |             | NA          | NOTE 5  |
|                                |                       | ACC GAMMA                                  | 5.0E5           | 2.2E7           | 1                  | 2         | TEST-SIMCR2 | YES         |         |
| OP. CODE:                      | A                     | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                |                       | ACC BETA                                   | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3  |
|                                |                       | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                |                       | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIMCR2 | NA          |         |
| ACCURACY - -                   | NOTE 4                | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                          | 0.25% CALIB SPAN      |                                            |                 |                 |                    |           |             |             |         |
| DEMO:                          | 2.3% CALIB SPAN       |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.:                      | SC306175              |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                   | NA                    |                                            |                 |                 |                    |           |             |             |         |
| SPRAY:                         | NA                    |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |                       |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE (OR) SPRAY         |                       |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                       |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                       |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |                       |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |                       |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |                       |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 20                    |                       |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                 |                       |                                            |                 |                 |                    |           |             |             |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E, SDDF # IEEE 7.131-5000D, SDDF # IEEE 7.131-5000B
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 12-1-C37
- EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028
- EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.  
4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.  
5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |              |             |         |
|--------------------------------|------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|--------------|-------------|---------|
|                                |                  | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD  | MARGIN DEMO | REMARKS |
|                                |                  |                                            |                 |                 | SPECIFIED          | QUALIFIED |              |             |         |
| EQUIP NO.:                     | 2IAS*PT235       | OP.TIME:                                   | 100 DAYS        | >100DA [R2]     | 3                  | 2,5       | TEST-SIM[R2] | YES         |         |
| SPEC NO.:                      | C071M            | TEMP (F):                                  |                 |                 |                    |           |              |             |         |
| SYSTEM:                        | INSTRUMENT       |                                            |                 |                 |                    |           |              |             |         |
|                                | AIR SYSTEM       | NORMAL                                     | 104/95          | 120             | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 1  |
|                                |                  | ABNORMAL                                   | 119 [R2]        | 203 [R2]        | 1                  | 2,4       | AN + DATA    | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)            |                  | ACCIDENT                                   | 175             | 318             | 1                  | 2         | TEST-SIM[R2] | YES         |         |
| PRESSURE TRANSMITTER           |                  | PRESS (PSIG)                               |                 |                 |                    |           |              |             | NOTE 1  |
|                                |                  | NORMAL                                     | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                |                  | ABNORMAL                                   | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| MANUFACTURER:                  | ROSEMOUNT        | ACCIDENT                                   | 2.8             | 73              | 1                  | 2         | TEST-SIM[R2] | YES         |         |
|                                |                  | RH (%)                                     |                 |                 |                    |           |              |             | NOTE 1  |
| MODEL NO.:                     | 1153GB7PA        | NORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                |                  | ABNORMAL                                   | 50              | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| SAFETY FUNCTION:               | - - -            | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| TRANSMIT ADS ACCUMULATOR TK37  |                  | RADIATION:                                 |                 |                 |                    |           |              |             | NOTE 1  |
|                                |                  | NORM GAMMA                                 | 5.5E5           |                 | 1                  |           |              | NA          | NOTE 5  |
|                                |                  | ACC GAMMA                                  | 5.0E5           | 2.2E7           | 1                  | 2         | TEST-SIM[R2] | YES         |         |
| OP. CODE:                      | A                | NORM BETA                                  | NA              |                 | 1                  |           |              | NA          |         |
|                                |                  | ACC BETA                                   | 6.1E6           |                 | 1                  |           |              | YES         | NOTE 3  |
|                                |                  | NEUTRON                                    | NA              |                 | 1                  |           |              | NA          |         |
|                                |                  | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIM[R2] | NA          |         |
| ACCURACY - -                   | NOTE 4           | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA           | NA          |         |
| SPEC:                          | 0.25% CALIB SPAN |                                            |                 |                 |                    |           |              |             |         |
| DEMO:                          | 2.3% CALIB SPAN  |                                            |                 |                 |                    |           |              |             |         |
| ZONE NO.:                      | SC306175         |                                            |                 |                 |                    |           |              |             |         |
| SUBMERGENCE:                   | NA               |                                            |                 |                 |                    |           |              |             |         |
| SPRAY:                         | NA               |                                            |                 |                 |                    |           |              |             |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                            |                 |                 |                    |           |              |             |         |
| SUBMERGENCE (OR) SPRAY         |                  |                                            |                 |                 |                    |           |              |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                            |                 |                 |                    |           |              |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                  |                                            |                 |                 |                    |           |              |             |         |
| MAINT/SURVEILL - - -           |                  |                                            |                 |                 |                    |           |              |             |         |
| REFERENCE: 2                   |                  |                                            |                 |                 |                    |           |              |             |         |
| QUALIFIED LIFE - - -           |                  |                                            |                 |                 |                    |           |              |             |         |
| (YEARS): 20                    |                  |                                            |                 |                 |                    |           |              |             |         |
| REFERENCE: 2,4                 |                  |                                            |                 |                 |                    |           |              |             |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.





### ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



| EQUIPMENT DESCRIPTION                                          |                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                  |                      |                 |                    |           |              |             |                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------|--------------------|-----------|--------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                |                       | PARAMETER                                                                                                                   | SPECIFIED VALUE      | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD  | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                                          |
|                                                                |                       |                                                                                                                             |                      |                 | SPECIFIED          | QUALIFIED |              |             |                                                                                                                                                                                                                                                                  |
| EQUIP NO.:                                                     | 2RHS*FT60A            | OP.TIME:                                                                                                                    | 100 DAYS             | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIM[R2] | YES         |                                                                                                                                                                                                                                                                  |
| SPEC NO.:                                                      | C071M                 | TEMP (F):                                                                                                                   | NORMAL 104/85        | 120             | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 1                                                                                                                                                                                                                                                           |
| SYSTEM:                                                        | INSTRUMENT AIR SYSTEM |                                                                                                                             | ABNORMAL 92          | 120             | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 2                                                                                                                                                                                                                                                           |
|                                                                |                       |                                                                                                                             | ACCIDENT 175         | 318             | 1                  | 2         | TEST-SIM[R2] | YES         |                                                                                                                                                                                                                                                                  |
| TYPE: (DESCRIPTION)                                            |                       | PRESS(PSIG)                                                                                                                 | NORMAL -.25"W.G.     | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |                                                                                                                                                                                                                                                                  |
| FLOW TRANSMITTER                                               |                       |                                                                                                                             | ABNORMAL -.25"W.G.   | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 1                                                                                                                                                                                                                                                           |
| MANUFACTURER:                                                  | ROSEMOUNT             |                                                                                                                             | ACCIDENT 2.8         | 73              | 1                  | 2         | TEST-SIM[R2] | YES         |                                                                                                                                                                                                                                                                  |
| MODEL NO.:                                                     | 1153DB5PA             | RH (%) :                                                                                                                    | NORMAL 50            | 95              | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 1                                                                                                                                                                                                                                                           |
|                                                                |                       |                                                                                                                             | ABNORMAL 50          | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |                                                                                                                                                                                                                                                                  |
| SAFETY FUNCTION:                                               | - - -                 |                                                                                                                             | ACCIDENT 100         | 100             | 1                  | 2         | TEST-SIM[R2] | NA          |                                                                                                                                                                                                                                                                  |
| TRANSMIT RHS HX DISCHARGE FLOW                                 |                       | RADIATION:                                                                                                                  | NORM GAMMA 5.5E6     |                 | 1                  |           |              | NA          | NOTE 1                                                                                                                                                                                                                                                           |
|                                                                |                       |                                                                                                                             | ACC GAMMA 1.7E7 [R2] | 2.2E7           | 5                  | 2         | TEST-SIM[R2] | YES         | NOTE 5                                                                                                                                                                                                                                                           |
| OP. CODE:                                                      | A                     |                                                                                                                             | NORM BETA NA         |                 | 1                  |           |              | NA          |                                                                                                                                                                                                                                                                  |
|                                                                |                       |                                                                                                                             | ACC BETA 6.1E6       |                 | 1                  |           |              | YES         | NOTE 3                                                                                                                                                                                                                                                           |
|                                                                |                       |                                                                                                                             | NEUTRON NA           |                 | 1                  |           |              | NA          |                                                                                                                                                                                                                                                                  |
|                                                                |                       |                                                                                                                             | SPRAY NA             | YES             | NA                 | 2         | TEST-SIM[R2] | NA          |                                                                                                                                                                                                                                                                  |
| ACCURACY - -                                                   | NOTE 4                | SUBMERGENCE                                                                                                                 | NA                   | NA              | NA                 | NA        | NA           | NA          |                                                                                                                                                                                                                                                                  |
| SPEC:                                                          | 0.25% CALIB SPAN      |                                                                                                                             |                      |                 |                    |           |              |             |                                                                                                                                                                                                                                                                  |
| DEMO:                                                          | 2.8% CALIB SPAN       |                                                                                                                             |                      |                 |                    |           |              |             |                                                                                                                                                                                                                                                                  |
| ZONE NO.:                                                      | SC175105              |                                                                                                                             |                      |                 |                    |           |              |             |                                                                                                                                                                                                                                                                  |
| SUBMERGENCE:                                                   | NA                    | DOCUMENT REFERENCE:                                                                                                         |                      |                 |                    |           |              |             |                                                                                                                                                                                                                                                                  |
| SPRAY:                                                         | NA                    | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]                                 |                      |                 |                    |           |              |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                     |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY                |                       | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E<br>SDDF # IEEE 7.131-5000D<br>SDDF # IEEE 7.131-5000B |                      |                 |                    |           |              |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.<br>3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.                                                                                                                           |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                       | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C7                                                                  |                      |                 |                    |           |              |             | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION. |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |                       | 4. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028                                                                    |                      |                 |                    |           |              |             | 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.                                                                                                                                                                                  |
| QUALIFIED LIFE - - -<br>(YEARS): 20<br>REFERENCE: 2,4          |                       | 5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P                                                                 |                      |                 |                    |           |              |             |                                                                                                                                                                                                                                                                  |
|                                                                |                       | 6. EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005                                                             |                      |                 |                    |           |              |             |                                                                                                                                                                                                                                                                  |
|                                                                |                       | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                |                      |                 |                    |           |              |             |                                                                                                                                                                                                                                                                  |



18-Feb-86

QUAL REF #\_C071MAW REV 2

| EQUIPMENT DESCRIPTION                           |                              | ENVIRONMENTAL CONDITIONS AND QUALIFICATION    |                 |                 |                    |           |             |             |         |
|-------------------------------------------------|------------------------------|-----------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                 |                              | PARAMETER                                     | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                 |                              |                                               |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                      | 2RHS*FT60B                   | OP.TIME:                                      | 100 DAYS        | 100DAYS[R2]     | 3                  | 2,5       | TEST-SIM    | YES         |         |
| SPEC NO.:                                       | C071M                        | TEMP (F):                                     |                 |                 |                    |           |             |             |         |
| SYSTEM:                                         | RESIDUAL HEAT REMOVAL SYSTEM | NORMAL                                        | 104/85          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
|                                                 |                              | ABNORMAL                                      | 92              | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)                             |                              | ACCIDENT                                      | 175             | 318             | 1                  | 2         | TEST-SIM    | YES         |         |
| FLOW TRANSMITTER                                |                              | PRESS(PSIG)                                   |                 |                 |                    |           |             |             | NOTE 1  |
|                                                 |                              | NORMAL                                        | -.25"WG         | ATM             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                 |                              | ABNORMAL                                      | -.25"WG         | ATM             | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                                   | ROSEMOUNT                    | ACCIDENT                                      | 2.8             | 73              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                 |                              | RH (%):                                       |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                                      | 1153DBSPA                    | NORMAL                                        | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                 |                              | ABNORMAL                                      | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:                                |                              | ACCIDENT                                      | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| TRANSMIT RHS HX DISCHARGE FLOW                  |                              | RADIATION:                                    |                 |                 |                    |           |             |             | NOTE 1  |
|                                                 |                              | NORM GAMMA                                    | 2.8E6[R1]       |                 | 1                  |           |             | NA          | NOTE 5  |
|                                                 |                              | ACC GAMMA                                     | 1.6E7           | 2.2E7           | 4                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                                       | A                            | NORM BETA                                     | NA              |                 | 1                  |           |             | NA          |         |
|                                                 |                              | ACC BETA                                      | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3  |
|                                                 |                              | NEUTRON                                       | NA              |                 | 1                  |           |             | NA          |         |
|                                                 |                              | SPRAY                                         | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY --                                     | NOTE 4                       | SUBMERGENCE                                   | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                                           | 0.25% CALIB SPAN             |                                               |                 |                 |                    |           |             |             |         |
| DEMO:                                           | 2.8% CALIB SPAN              |                                               |                 |                 |                    |           |             |             |         |
| ZONE NO.:                                       | SC175102                     |                                               |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                    | NA                           |                                               |                 |                 |                    |           |             |             |         |
| SPRAY:                                          | NA                           |                                               |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY |                              |                                               |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                    |                              |                                               |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                  |                              |                                               |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL --                               |                              |                                               |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                    |                              |                                               |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE --                               |                              |                                               |                 |                 |                    |           |             |             |         |
| (YEARS): 20 [R2]                                |                              |                                               |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                    |                              |                                               |                 |                 |                    |           |             |             |         |
|                                                 |                              | [R2] INDICATES CHANGES MADE IN THIS REVISION. |                 |                 |                    |           |             |             |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.

4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.

5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.



18-Feb-86

QUAL REF #\_C071MAX\_ REV 2

| EQUIPMENT DESCRIPTION          |                              | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|--------------------------------|------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |                              | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |                              |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                     | 2RHS*FT63A                   | OP.TIME:                                   | 100 DAYS        | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIMCR2 | YES         |         |
| SPEC NO.:                      | C071M                        | TEMP (F):                                  |                 |                 |                    |           |             |             |         |
| SYSTEM:                        | RESIDUAL HEAT REMOVAL SYSTEM | NORMAL                                     | 104/85          | 120             | 1                  | 2         | TEST-SIMCR2 | NA          | NOTE 1  |
|                                |                              | ABNORMAL                                   | 87              | 120             | 1                  | 2,4       | TEST-SIMCR2 | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)            |                              | ACCIDENT                                   | 200             | 318             | 1                  | 2         | TEST-SIMCR2 | YES         |         |
| FLOW TRANSMITTER               |                              | PRESS (PSIG)                               |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                              | NORMAL                                     | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
|                                |                              | ABNORMAL                                   | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| MANUFACTURER:                  | ROSEMOUNT                    | ACCIDENT                                   | 2.8             | 73              | 1                  | 2         | TEST-SIMCR2 | YES         |         |
|                                |                              | RH (%)                                     |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                     | 1153DB4PA                    | NORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |         |
|                                |                              | ABNORMAL                                   | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| SAFETY FUNCTION:               | - - -                        | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| TRANSMIT RHSA CONTAINMENT      |                              | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1  |
| SPRAY FLOW                     |                              | NORM GAMMA                                 | 4.0E6           |                 | 1                  |           |             | NA          | NOTE 5  |
|                                |                              | ACC GAMMA                                  | 9.9E5           | 2.2E7           | 5                  | 2         | TEST-SIMCR2 | YES         |         |
| OP. CODE:                      | A                            | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                |                              | ACC BETA                                   | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3  |
|                                |                              | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                |                              | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIMCR2 | NA          |         |
| ACCURACY - -                   | NOTE 4                       | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                          | 0.25% CALIB SPAN             |                                            |                 |                 |                    |           |             |             |         |
| DEMO:                          | 5.0% CALIB SPAN              |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.:                      | SC261145                     |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                   | NA                           |                                            |                 |                 |                    |           |             |             |         |
| SPRAY:                         | NA                           |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |                              |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE (OR) SPRAY         |                              |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                              |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                              |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |                              |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |                              |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |                              |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 20                    |                              |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                 |                              |                                            |                 |                 |                    |           |             |             |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E  
SDDF # IEEE 7.131-5000D  
SDDF # IEEE 7.131-5000B
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C1
- EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028
- CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P
- EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005

NOTES:

- FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
- NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
- THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.
- SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.
- THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.

[R2] INDICATES CHANGES MADE IN THIS REVISION





QUAL REF #\_C071MAY\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION                                          |                                 | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|----------------------------------------------------------------|---------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                |                                 | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                |                                 |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                     | 2RHS*FT63B                      |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.:                                                      | C071M                           | OP.TIME:                                   | 100 DAYS           | 100DAYS[R2]        | 3                  | 2,6       | TEST-SIMCR2    | YES            |         |
| SYSTEM:                                                        | RESIDUAL HEAT<br>REMOVAL SYSTEM | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                |                                 | NORMAL                                     | 104/85             | 120                | 1                  | 2         | TEST-SIMCR2    | NA             | NOTE 2  |
|                                                                |                                 | ABNORMAL                                   | 87                 | 120                | 1                  | 2,4       | TEST-SIMCR2    | NA             |         |
| TYPE: (DESCRIPTION)                                            |                                 | ACCIDENT                                   | 200                | 318                | 1                  | 2         | TEST-SIMCR2    | YES            |         |
| FLOW TRANSMITTER                                               |                                 | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                |                                 | NORMAL                                     | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
|                                                                |                                 | ABNORMAL                                   | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| MANUFACTURER:                                                  | ROSEMOUNT                       | ACCIDENT                                   | 2.8                | 73                 | 1                  | 2         | TEST-SIMCR2    | YES            |         |
|                                                                |                                 | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                                                     | 1153DB4PA                       | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIMCR2    | NA             |         |
|                                                                |                                 | ABNORMAL                                   | 50                 | 95                 | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| SAFETY FUNCTION:                                               | - - -                           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| TRANSMIT RHSA CONTAINMENT<br>SPRAY FLOW                        |                                 | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                |                                 | NORM GAMMA                                 | 4.0E6              |                    | 1                  |           |                | NA             | NOTE 5  |
|                                                                |                                 | ACC GAMMA                                  | 8.9E5              | 2.2E7              | 5                  | 2         | TEST-SIMCR2    | YES            |         |
| OP. CODE:                                                      | A                               | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                |                                 | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            | NOTE 3  |
|                                                                |                                 | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                |                                 | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIMCR2    | NA             |         |
| ACCURACY - -                                                   | NOTE 4                          | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                                                          | 0.25% CALIB SPAN                |                                            |                    |                    |                    |           |                |                |         |
| DEMO:                                                          | 5.0% CALIB SPAN                 |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                      | SC261145                        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                   | NA                              |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                         | NA                              |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE (OR) SPRAY             |                                 |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                 |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |                                 |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 20<br>REFERENCE: 2,4          |                                 |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E  
SDDF # IEEE 7.131-5000D  
SDDF # IEEE 7.131-5000B
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-7-C1
- EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028
- CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P
- EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.  
4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.  
5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.

[R2] INDICATES CHANGES MADE IN THIS REVISION



| EQUIPMENT DESCRIPTION          |                                 | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |             |           |                                                 |
|--------------------------------|---------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|-------------|-----------|-------------------------------------------------|
|                                |                                 | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL        | MARGIN    | REMARKS                                         |
|                                |                                 |                                                 |                    |                    | SPECIFIED          | QUALIFIED | METHOD      | DEMO      |                                                 |
| EQUIP NO.:                     | 2RHS*FT64A                      | OP.TIME:                                        | 100 DAYS           | 100DAYS[R2]        | 3                  | 2,6       | TEST-SIMCR2 | YES       |                                                 |
| SPEC NO.:                      | C071M                           | TEMP (F):                                       | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -   | - - - - - |                                                 |
| SYSTEM:                        | RESIDUAL HEAT<br>REMOVAL SYSTEM | NORMAL                                          | 104/93             | 120                | 1                  | 2         | TEST-SIMCR2 | NA        | NOTE 1                                          |
|                                |                                 | ABNORMAL                                        | 106                | 120                | 1                  | 2,4       | TEST-SIMCR2 | NA        | NOTE 2                                          |
| TYPE: (DESCRIPTION)            |                                 | ACCIDENT                                        | 200                | 318                | 1                  | 2         | TEST-SIMCR2 | YES       |                                                 |
| FLOW TRANSMITTER               |                                 | PRESS(PSIG)                                     | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -   | - - - - - | NOTE 1                                          |
|                                |                                 | NORMAL                                          | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIMCR2 | NA        |                                                 |
|                                |                                 | ABNORMAL                                        | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIMCR2 | NA        |                                                 |
| MANUFACTURER:                  | ROSEMOUNT                       | ACCIDENT                                        | 2.8                | 73                 | 1                  | 2         | TEST-SIMCR2 | YES       |                                                 |
| MODEL NO.:                     | 1153DB5PA                       | RH (%):                                         | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -   | - - - - - | NOTE 1                                          |
|                                |                                 | NORMAL                                          | 50                 | 95                 | 1                  | 2         | TEST-SIMCR2 | NA        |                                                 |
|                                |                                 | ABNORMAL                                        | 50                 | 95                 | 1                  | 2         | TEST-SIMCR2 | NA        |                                                 |
| SAFETY FUNCTION: - - -         |                                 | ACCIDENT                                        | 100                | 100                | 1                  | 2         | TEST-SIMCR2 | NA        |                                                 |
| TRANSMIT RHS A SUPP POOL       |                                 | RADIATION:                                      | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -   | - - - - - | NOTE 1                                          |
| SPRAY POOL                     |                                 | NORM GAMMA                                      | 1.0E6              |                    | 1                  |           |             | NA        | NOTE 5                                          |
|                                |                                 | ACC GAMMA                                       | 1.7E7              | 2.2E7              | 5                  | 2         | TEST-SIMCR2 | YES       |                                                 |
| OP. CODE:                      | A                               | NORM BETA                                       | NA                 |                    | 1                  |           |             | NA        |                                                 |
|                                |                                 | ACC BETA                                        | 6.1E6              |                    | 1                  |           |             | YES       | NOTE 3                                          |
|                                |                                 | NEUTRON                                         | NA                 |                    | 1                  |           |             | NA        |                                                 |
|                                |                                 | SPRAY                                           | NA                 | YES                | NA                 |           | TEST-SIMCR2 | NA        |                                                 |
| ACCURACY - -                   | NOTE 4                          | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA          | NA        |                                                 |
| SPEC:                          | 0.25% CALIB SPAN                |                                                 |                    |                    |                    |           |             |           |                                                 |
| DEMO:                          | 3.9% CALIB SPAN                 |                                                 |                    |                    |                    |           |             |           |                                                 |
| ZONE NO.:                      | SC215122                        |                                                 |                    |                    |                    |           |             |           |                                                 |
| SUBMERGENCE:                   | NA                              | DOCUMENT REFERENCE:                             |                    |                    |                    |           |             |           |                                                 |
| SPRAY:                         | NA                              | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |             |           | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| EQUIPMENT NOT SUBJECT TO       |                                 | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]     |                    |                    |                    |           |             |           | SEE THE DOCUMENT REFERENCED.                    |
| SUBMERGENCE (OR) SPRAY         |                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |             |           | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
|                                |                                 | SDDF # IEEE 7.131-5000E                         |                    |                    |                    |           |             |           | DESIGN/AVERAGE.                                 |
|                                |                                 | SDDF # IEEE 7.131-5000D                         |                    |                    |                    |           |             |           | 3.THE TRANSMITTER IS HERMETICALLY               |
|                                |                                 | SDDF # IEEE 7.131-5000B                         |                    |                    |                    |           |             |           | SEALED AND NOT AFFECTED BY BETA                 |
| DOCUMENTATION ACCEPTABILITY:   |                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |             |           | RADIATION.                                      |
| ACCEPTABLE TO NUREG 0588,CAT I |                                 | FILE NO. 27-7-C1                                |                    |                    |                    |           |             |           | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED          |
|                                |                                 | 4. EXTENDED QUALIFIED LIFE CALCULATION          |                    |                    |                    |           |             |           | SPAN IS FACTORY CALIBRATION. THE                |
|                                |                                 | NO. 12177-EQS-028                               |                    |                    |                    |           |             |           | DEMO ACCURACY INCLUDES EFFECT OF                |
|                                |                                 | 5. CASE SPECIFIC RADIATION CALCULATION          |                    |                    |                    |           |             |           | ADDITIONAL ERRORS. SEE SWEC CALCU-              |
|                                |                                 | NO. 12177-PR(C)-22-P                            |                    |                    |                    |           |             |           | LATION NO. 12177-EQS-14. DEMON-                 |
| MAINT/SURVEILL - - -           |                                 | 6. EXTENDING POST ACCIDENT PERIOD CALCULATION   |                    |                    |                    |           |             |           | STRATED ACCURACY IS ACCEPTABLE IN               |
| REFERENCE: 2                   |                                 | NO. 12177-EQS-005                               |                    |                    |                    |           |             |           | ACCORDANCE WITH THE TRANSMITTERS                |
|                                |                                 |                                                 |                    |                    |                    |           |             |           | SETPOINT CALCULATION.                           |
| QUALIFIED LIFE - - -           |                                 |                                                 |                    |                    |                    |           |             |           | 5.THE NORMAL RADIATION VALUE IS BASED           |
| (YEARS): 20                    |                                 |                                                 |                    |                    |                    |           |             |           | ON THE QUALIFIED LIFE OF THE                    |
| REFERENCE: 2,4                 |                                 |                                                 |                    |                    |                    |           |             |           | TRANSMITTER.                                    |
|                                |                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION    |                    |                    |                    |           |             |           |                                                 |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                        |                              | PARAMETER    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | - QUAL METHOD | MARGIN DEMO | REMARKS |
|----------------------------------------------|------------------------------|--------------|-----------------|-----------------|--------------------|-----------|---------------|-------------|---------|
|                                              |                              |              |                 |                 | SPECIFIED          | QUALIFIED |               |             |         |
| EQUIP NO.:                                   | 2RHS*FT64B                   | OP.TIME:     | 100 DAYS        | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIMCR2   | YES         |         |
| SPEC NO.:                                    | C071M                        | TEMP (F):    |                 |                 |                    |           |               |             |         |
| SYSTEM:                                      | RESIDUAL HEAT REMOVAL SYSTEM | NORMAL       | 104/93          | 120             | 1                  | 2         | TEST-SIMCR2   | NA          | NOTE 1  |
|                                              |                              | ABNORMAL     | 106             | 120             | 1                  | 2,4       | TEST-SIMCR2   | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)                          |                              | ACCIDENT     | 200             | 318             | 1                  | 2         | TEST-SIMCR2   | YES         |         |
| FLOW TRANSMITTER                             |                              | PRESS (PSIG) |                 |                 |                    |           |               |             | NOTE 1  |
|                                              |                              | NORMAL       | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2   | NA          |         |
|                                              |                              | ABNORMAL     | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2   | NA          |         |
| MANUFACTURER:                                | ROSEMOUNT                    | ACCIDENT     | 2.8             | 73              | 1                  | 2         | TEST-SIMCR2   | YES         |         |
| MODEL NO.:                                   | 1153DB5PA                    | RH (%):      |                 |                 |                    |           |               |             | NOTE 1  |
|                                              |                              | NORMAL       | 50              | 95              | 1                  | 2         | TEST-SIMCR2   | NA          |         |
|                                              |                              | ABNORMAL     | 50              | 95              | 1                  | 2         | TEST-SIMCR2   | NA          |         |
| SAFETY FUNCTION:                             | - - -                        | ACCIDENT     | 100             | 100             | 1                  | 2         | TEST-SIMCR2   | NA          |         |
| TRANSMIT RHS B SUPP POOL                     |                              | RADIATION:   |                 |                 |                    |           |               |             | NOTE 1  |
| SPRAY POOL                                   |                              | NORM GAMMA   | 1.0E6           |                 | 1                  |           |               | NA          | NOTE 5  |
|                                              |                              | ACC GAMMA    | 1.7E7           | 2.2E7           | 5                  | 2         | TEST-SIMCR2   | YES         |         |
| OP. CODE:                                    | A                            | NORM BETA    | NA              |                 | 1                  |           |               | NA          |         |
|                                              |                              | ACC BETA     | 6.1E6           |                 | 1                  |           |               | YES         | NOTE 3  |
|                                              |                              | NEUTRON      | NA              |                 | 1                  |           |               | NA          |         |
| ACCURACY - -                                 | NOTE 4                       | SPRAY        | NA              | YES             | NA                 | 2         | TEST-SIMCR2   | NA          |         |
|                                              |                              | SUBMERGENCE  | NA              | NA              | NA                 | NA        | NA            | NA          |         |
| SPEC:                                        | 0.25% CALIB SPAN             |              |                 |                 |                    |           |               |             |         |
| DEMO:                                        | 3.9% CALIB SPAN              |              |                 |                 |                    |           |               |             |         |
| ZONE NO.:                                    | SC215122                     |              |                 |                 |                    |           |               |             |         |
| SUBMERGENCE:                                 | NA                           |              |                 |                 |                    |           |               |             |         |
| SPRAY:                                       | NA                           |              |                 |                 |                    |           |               |             |         |
| EQUIPMENT NOT SUBJECT TO                     |                              |              |                 |                 |                    |           |               |             |         |
| SUBMERGENCE (OR) SPRAY                       |                              |              |                 |                 |                    |           |               |             |         |
| DOCUMENTATION ACCEPTABILITY:                 |                              |              |                 |                 |                    |           |               |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I               |                              |              |                 |                 |                    |           |               |             |         |
| MAINT/SURVEILL - - -                         |                              |              |                 |                 |                    |           |               |             |         |
| REFERENCE: 2                                 |                              |              |                 |                 |                    |           |               |             |         |
| QUALIFIED LIFE - - -                         |                              |              |                 |                 |                    |           |               |             |         |
| (YEARS): 20                                  |                              |              |                 |                 |                    |           |               |             |         |
| REFERENCE: 2,4                               |                              |              |                 |                 |                    |           |               |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION |                              |              |                 |                 |                    |           |               |             |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.

4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.

5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.



| EQUIPMENT DESCRIPTION                                          |                           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|----------------------------------------------------------------|---------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                |                           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                |                           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                     | 2RSS*FT106                | OP. TIME:                                  | 12 HRS             | 100DAYS[R2]        | 3                  | 2,5       | TEST-SIM[R2]   | YES            |         |
| SPEC NO.:                                                      | C071M                     | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM:                                                        | REMOTE SHUTDOWN<br>SYSTEM | NORMAL                                     | 104/85             | 120                | 1                  | 2         | TEST-SIM[R2]   | NA             | NOTE 2  |
|                                                                |                           | ABNORMAL                                   | 92                 | 120                | 1                  | 2,4       | TEST-SIM[R2]   | NA             |         |
| TYPE: (DESCRIPTION)                                            |                           | ACCIDENT                                   | 175                | 318                | 1                  | 2         | TEST-SIM[R2]   | YES            |         |
| FLOW TRANSMITTER                                               |                           | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                |                           | NORMAL                                     | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
|                                                                |                           | ABNORMAL                                   | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
| MANUFACTURER:                                                  | ROSEMOUNT                 | ACCIDENT                                   | 2.8                | 73                 | 1                  | 2         | TEST-SIM[R2]   | YES            |         |
|                                                                |                           | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                                                     | 1153DB4PA                 | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
|                                                                |                           | ABNORMAL                                   | 50                 | 95                 | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
| SAFETY FUNCTION:                                               | - - -                     | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
| TRANSMIT RCIC PMP DISCH<br>FLOW                                |                           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                |                           | NORM GAMMA                                 | 5.5E6              |                    | 1                  |           |                | NA             | NOTE 5  |
|                                                                |                           | ACC GAMMA                                  | 1E6 [R2]           | 2.2E7              | 1 [R1]             | 2         | TEST-SIM[R2]   | YES            |         |
| OP. CODE:                                                      | A                         | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                |                           | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            | NOTE 3  |
|                                                                |                           | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                                                |                           | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-SIM[R2]   | NA             |         |
| ACCURACY - -                                                   | NOTE 4                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                                                          | 0.25% CALIB SPAN          |                                            |                    |                    |                    |           |                |                |         |
| DEMO:                                                          | 6.7% CALIB SPAN           |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                                      | SC175105                  |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                   | NA                        |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                         | NA                        |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE (OR) SPRAY             |                           |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                           |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |                           |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 20<br>REFERENCE: 2,4          |                           |                                            |                    |                    |                    |           |                |                |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.

4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.

5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.

[R2] INDICATES CHANGES MADE IN THIS REVISION





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          |             |                 |                 | DOCUMENT REFERENCE |           |              |             |                  |
|----------------------------------------------------------------|-------------|-----------------|-----------------|--------------------|-----------|--------------|-------------|------------------|
|                                                                | PARAMETER   | SPECIFIED VALUE | QUALIFIED VALUE | SPECIFIED          | QUALIFIED | TOTAL METHOD | MARGIN DEMO | REMARKS          |
| EQUIP NO.: 2RSS*LT101                                          | OP.TIME:    | 100 DAYS        | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIMCR2  | YES         |                  |
| SPEC NO.: C071M                                                | TEMP (F):   | - - - -         | - - - -         | - - - -            | - - - -   | - - - -      | - - - -     | NOTE 1           |
| SYSTEM: REMOTE SHUTDOWN SYSTEM                                 | NORMAL      | 104/85          | 120             | 1                  | 2         | TEST-SIMCR2  | NA          | NOTE 2           |
|                                                                | ABNORMAL    | 87              | 120             | 1                  | 2         | TEST-SIMCR2  | NA          |                  |
|                                                                | ACCIDENT    | 200             | 318             | 1                  | 2         | TEST-SIMCR2  | YES         |                  |
| TYPE: (DESCRIPTION)                                            | PRESS(PSIG) | - - - -         | - - - -         | - - - -            | - - - -   | - - - -      | - - - -     | NOTE 1           |
| LEVEL TRANSMITTER                                              | NORMAL      | -.25"WG         | ATM             | 1                  | 2         | TEST-SIMCR2  | NA          |                  |
|                                                                | ABNORMAL    | -.25"WG         | ATM             | 1                  | 2         | TEST-SIMCR2  | NA          |                  |
| MANUFACTURER: ROSEMOUNT                                        | ACCIDENT    | 2.8             | 73              | 1                  | 2         | TEST-SIMCR2  | YES         |                  |
| MODEL NO.: 1153DBSPA                                           | RH (%):     | - - - -         | - - - -         | - - - -            | - - - -   | - - - -      | - - - -     | NOTE 1           |
|                                                                | NORMAL      | 50              | 95              | 1                  | 2         | TEST-SIMCR2  | NA          |                  |
|                                                                | ABNORMAL    | 50              | 95              | 1                  | 2         | TEST-SIMCR2  | NA          |                  |
| SAFETY FUNCTION: - - -                                         | ACCIDENT    | 100             | 100             | 1                  | 2         | TEST-SIMCR2  | NA          |                  |
| TRANSMIT REACTOR VESSEL LEVEL                                  | RADIATION:  | - - - -         | - - - -         | - - - -            | - - - -   | - - - -      | - - - -     | NOTE 1<br>NOTE 5 |
|                                                                | NORM GAMMA  | 4E6             |                 | 1                  |           |              | NA          |                  |
|                                                                | ACC GAMMA   | 1.1E6           | 2.2E7           | 5                  | 2         | TEST-SIMCR2  | YES         |                  |
| OP. CODE: A                                                    | NORM BETA   | NA              |                 | 1                  |           |              | NA          |                  |
|                                                                | ACC BETA    | 6.1E6           |                 | 1                  |           |              | YES         | NOTE 3           |
|                                                                | NEUTRON     | NA              |                 | 1                  |           |              | NA          |                  |
|                                                                | SPRAY       | NA              | YES             | NA                 | 2         | TEST-SIMCR2  | NA          |                  |
| ACCURACY -- NOTE 4                                             | SUBMERGENCE | NA              | NA              | NA                 | NA        | NA           | NA          |                  |
| SPEC: 0.25% CALIB SPAN;                                        |             |                 |                 |                    |           |              |             |                  |
| DEMO: 5.0% CALIB SPAN                                          |             |                 |                 |                    |           |              |             |                  |
| ZONE NO.: SC261145                                             |             |                 |                 |                    |           |              |             |                  |
| SUBMERGENCE: NA                                                |             |                 |                 |                    |           |              |             |                  |
| SPRAY: NA                                                      |             |                 |                 |                    |           |              |             |                  |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY                |             |                 |                 |                    |           |              |             |                  |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |             |                 |                 |                    |           |              |             |                  |
|                                                                |             |                 |                 |                    |           |              |             |                  |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |             |                 |                 |                    |           |              |             |                  |
| QUALIFIED LIFE - - -<br>(YEARS): 20<br>REFERENCE: 2,4          |             |                 |                 |                    |           |              |             |                  |
|                                                                |             |                 |                 |                    |           |              |             |                  |
| [R2] INDICATES CHANGES MADE IN THIS REVISION                   |             |                 |                 |                    |           |              |             |                  |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.  
4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.  
5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.



18-Feb-86

QUAL REF #\_C071MBF\_\_\_\_\_ REV 2

| EQUIPMENT DESCRIPTION          |                           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                    |                    |           |                |                |         |
|--------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |                           | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2RSS*LT105                | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100 DAYS           | 100DAYS[R2]        | 3                  | 2,5       | TEST-SIMCR2    | YES            |         |
| SPEC NO.:                      | C071M                     | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| SYSTEM:                        | REMOTE SHUTDOWN<br>SYSTEM | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 104/85             | 120                | 1                  | 2         | TEST-SIMCR2    | NA             | NOTE 1  |
|                                |                           | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 92                 | 120                | 1                  | 2,4       | TEST-SIMCR2    | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)            |                           | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 175                | 318                | 1                  | 2         | TEST-SIMCR2    | YES            |         |
| LEVEL TRANSMITTER              |                           | PRESS (PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                | NOTE 1  |
|                                |                           | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
|                                |                           | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -.25"W.G.          | ATM                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| MANUFACTURER:                  | ROSEMOUNT                 | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2.8                | 73                 | 1                  | 2         | TEST-SIMCR2    | YES            |         |
|                                |                           | RH (%):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                     | 1153DB5PA                 | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 50                 | 95                 | 1                  | 2         | TEST-SIMCR2    | NA             |         |
|                                |                           | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 50                 | 95                 | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| SAFETY FUNCTION:               | - - -                     | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100                | 100                | 1                  | 2         | TEST-SIMCR2    | NA             |         |
| TRANSMIT SUPPR POOL WTR        |                           | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                    |                    |           |                |                | NOTE 1  |
| TEMP                           |                           | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 5.5E6              |                    | 1                  |           |                | NA             | NOTE 5  |
|                                |                           | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1.7E7              | 2.2E7              | 1 [R1]             | 2         | TEST-SIMCR2    | YES            |         |
| OP. CODE:                      | A                         | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                           | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6.1E6              |                    | 1                  |           |                | YES            | NOTE 3  |
|                                |                           | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                           | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | NA                 | YES                | NA                 | 2         | TEST-SIMCR2    | NA             |         |
| ACCURACY - -                   | NOTE 4                    | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                          | 0.25% CALIB SPAN          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| DEMO:                          | 4.5% CALIB SPAN           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | SC175105                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| SPRAY:                         | NA                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| SUBMERGENCE (OR) SPRAY         |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| (YEARS): 20                    |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                 |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
|                                |                           | <p>DOCUMENT REFERENCE:</p> <ol style="list-style-type: none"> <li>EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]</li> <li>VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E<br/>SDDF # IEEE 7.131-5000D<br/>SDDF # IEEE 7.131-5000B</li> <li>EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. RSS-CS</li> <li>EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028</li> <li>EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005</li> </ol> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.<br/>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.<br/>3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.<br/>4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.<br/>5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.</p> |                    |                    |                    |           |                |                |         |
|                                |                           | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                    |                    |           |                |                |         |



| EQUIPMENT DESCRIPTION                           |                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|-------------------------------------------------|------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                 |                        | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                 |                        |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                      | 2RSS*LT115             | OP.TIME:                                   | 100 DAYS        | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIMCR2 | YES         |         |
| SPEC NO.:                                       | C071M                  | TEMP (F):                                  |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                                         | REMOTE SHUTDOWN SYSTEM | NORMAL                                     | 104/85          | 120             | 1                  | 2         | TEST-SIMCR2 | NA          | NOTE 2  |
|                                                 |                        | ABNORMAL                                   | 87              | 120             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| TYPE: (DESCRIPTION)                             |                        | ACCIDENT                                   | 200             | 318             | 1                  | 2         | TEST-SIMCR2 | YES         |         |
| LEVEL TRANSMITTER                               |                        | PRESS (PSIG)                               |                 |                 |                    |           |             |             | NOTE 1  |
|                                                 |                        | NORMAL                                     | -.25"WG         | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
|                                                 |                        | ABNORMAL                                   | -.25"WG         | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| MANUFACTURER:                                   | ROSEMOUNT              | ACCIDENT                                   | 2.8             | 73              | 1                  | 2         | TEST-SIMCR2 | YES         |         |
|                                                 |                        | RH (%):                                    |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                                      | 1153DB4PA              | NORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |         |
|                                                 |                        | ABNORMAL                                   | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| SAFETY FUNCTION:                                | - - -                  | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIMCR2 | NA          |         |
| TRANSMIT REACTOR VESSEL LEVEL                   |                        | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1  |
|                                                 |                        | NORM GAMMA                                 | 4.0E6           |                 | 1                  |           |             | NA          | NOTE 5  |
|                                                 |                        | ACC GAMMA                                  | 7.8E5           | 2.2E7           | 5                  | 2         | TEST-SIMCR2 | YES         |         |
| OP. CODE:                                       | A                      | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                                 |                        | ACC BETA                                   | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3  |
|                                                 |                        | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                                 |                        | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIMCR2 | NA          |         |
| ACCURACY - -                                    | NOTE 4                 | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                                           | 0.25% CALIB SPAN       |                                            |                 |                 |                    |           |             |             |         |
| DEMO:                                           | 3.0% CALIB SPAN [R2]   |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.:                                       | SC261145               |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                    | NA                     |                                            |                 |                 |                    |           |             |             |         |
| SPRAY:                                          | NA                     |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY |                        |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                    |                        |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                  |                        |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                            |                        |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                    |                        |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                            |                        |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 20                                     |                        |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                                  |                        |                                            |                 |                 |                    |           |             |             |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E  
SDDF # IEEE 7.131-5000D  
SDDF # IEEE 7.131-5000B
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. RSS-C3
- EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028
- CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P
- EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005

NOTES:

- FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
- NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
- THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.
- SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.
- THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.

[R2] INDICATES CHANGES MADE IN THIS REVISION



18-Feb-86

QUAL REF #\_C071MBI\_ REV 2

| EQUIPMENT DESCRIPTION                           |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                  |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|-------------------------------------------------|------------------|---------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                 |                  | PARAMETER                                                                                   | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                                          |
|                                                 |                  |                                                                                             |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                                                  |
| EQUIP NO.:                                      | 2GTS*FT10B       | OP.TIME:                                                                                    | 100 DAYS        | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                  |
| SPEC NO.:                                       | C071M            | TEMP (F):                                                                                   |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
| SYSTEM:                                         | GAS TREATMENT    | NORMAL                                                                                      | 104/85          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2                                                                                                                                                                                                                                                           |
|                                                 |                  | ABNORMAL                                                                                    | NA [R2]         | 104             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| TYPE: (DESCRIPTION)                             |                  | ACCIDENT                                                                                    | NA              | 318             | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                  |
| FLOW TRANSMITTER                                |                  | PRESS(PSIG)                                                                                 |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
|                                                 |                  | NORMAL                                                                                      | ATMOS           | ATM             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
|                                                 |                  | ABNORMAL                                                                                    | ATMOS           | ATM             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| MANUFACTURER:                                   | ROSEMOUNT        | ACCIDENT                                                                                    | NA              | 73              | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                  |
| MODEL NO.:                                      | 1153DB3          | RH (%):                                                                                     |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
|                                                 |                  | NORMAL                                                                                      | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
|                                                 |                  | ABNORMAL                                                                                    | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| SAFETY FUNCTION:                                |                  | ACCIDENT                                                                                    | NA              | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| SENSE DISCHARGE FLOW OF FN1B                    |                  | RADIATION:                                                                                  |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
|                                                 |                  | NORM GAMMA                                                                                  | 1.34E3          |                 | 1                  |           |             | NA          | NOTE 5                                                                                                                                                                                                                                                           |
|                                                 |                  | ACC GAMMA                                                                                   | 9.5E6           | 2.2E7           | 3                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                  |
| OP. CODE:                                       | A                | NORM BETA                                                                                   | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                                                  |
|                                                 |                  | ACC BETA                                                                                    | 1.1E2           |                 | 5                  |           |             | YES         | NOTE 3                                                                                                                                                                                                                                                           |
|                                                 |                  | NEUTRON                                                                                     | NA              |                 | 1                  |           |             | YES         |                                                                                                                                                                                                                                                                  |
|                                                 |                  | SPRAY                                                                                       | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| ACCURACY - -                                    | NOTE 4           | SUBMERGENCE:                                                                                | NA              | NA              | NA                 | NA        | NA          | NA          |                                                                                                                                                                                                                                                                  |
| SPEC:                                           | 0.25% CALIB SPAN |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| DEMO:                                           | 20.8% CALIB SPAN |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                                 | [R2]             |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| ZONE NO.:                                       | SG261355         |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| SUBMERGENCE:                                    | NA               | DOCUMENT REFERENCE:                                                                         |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| SPRAY:                                          | NA               | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2] |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                     |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY |                  | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E                       |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                           |
|                                                 |                  | SDDF # IEEE 7.131-5000D                                                                     |                 |                 |                    |           |             |             | 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.                                                                                                                                                                                     |
|                                                 |                  | SDDF # IEEE 7.131-5000B                                                                     |                 |                 |                    |           |             |             | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION. |
| DOCUMENTATION ACCEPTABILITY:                    |                  | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-15-C3                                 |                 |                 |                    |           |             |             | 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.                                                                                                                                                                                  |
| ACCEPTABLE TO NUREG 0588,CAT 1                  |                  | 4. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028                                    |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                                 |                  | 5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| MAINT/SURVEILL - - -                            |                  | 6. EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| REFERENCE: 2                                    |                  |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| QUALIFIED LIFE - - -                            |                  |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| (YEARS): 20                                     |                  |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| REFERENCE: 2,4                                  |                  |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                                 |                  | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |





QUAL REF #\_C071MBJ\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION   |                 |                 |                    |           |             |             |         |
|--------------------------------|------------------|----------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |                  | PARAMETER                                    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |                  |                                              |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                     | 2GTS*FT10A       | OP.TIME:                                     | 100 DAYS        | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIM    | YES         |         |
| SPEC NO.:                      | C071M            | TEMP (F):                                    |                 |                 |                    |           |             |             |         |
| SYSTEM:                        | GAS TREATMENT    | NORMAL                                       | 104/85          | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
|                                |                  | ABNORMAL                                     | 85 [R1]         | 104             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)            |                  | ACCIDENT                                     | NA              | 318             | 1                  | 2         | TEST-SIM    | NA[R2]      |         |
| FLOW TRANSMITTER               |                  | PRESS(PSIG)                                  |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                  | NORMAL                                       | ATMOS           | ATM             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |                  | ABNORMAL                                     | ATMOS           | ATM             | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                  | ROSEMOUNT        | ACCIDENT                                     | NA [R1]         | 73              | 1                  | 2         | TEST-SIM    | NA[R2]      |         |
| MODEL NO.:                     | 1153DB3          | IRH (%)                                      |                 |                 |                    |           |             |             | NOTE 1  |
|                                |                  | NORMAL                                       | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                |                  | ABNORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:               |                  | ACCIDENT                                     | NA [R1]         | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| SENSE DISCHARGE FLOW           |                  | RADIATION:                                   |                 |                 |                    |           |             |             | NOTE 1  |
| OF FN1A                        |                  | NORM GAMMA                                   | 1.34E3          |                 | 1                  |           |             | NA          | NOTE 5  |
|                                |                  | ACC GAMMA                                    | 9.5E6           | 2.2E7           | 5                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                      | A                | NORM BETA                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                |                  | ACC BETA                                     | 1.1E2           |                 | 5                  |           |             | YES         | NOTE 3  |
|                                |                  | NEUTRON                                      | NA              |                 | 1                  |           |             | YES         |         |
|                                |                  | SPRAY                                        | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY --                    | NOTE 4           | SUBMERGENCE                                  | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                          | 0.25% CALIB SPAN |                                              |                 |                 |                    |           |             |             |         |
| DEMO:                          | 20.8% CALIB SPAN |                                              |                 |                 |                    |           |             |             |         |
| ZONE NO.:                      | SG261356         |                                              |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                   | NA               |                                              |                 |                 |                    |           |             |             |         |
| SPRAY:                         | NA               |                                              |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                              |                 |                 |                    |           |             |             |         |
| SUBMERGENCE (OR) SPRAY         |                  |                                              |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                              |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                  |                                              |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL --              |                  |                                              |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |                  |                                              |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE --              |                  |                                              |                 |                 |                    |           |             |             |         |
| (YEARS): 20                    |                  |                                              |                 |                 |                    |           |             |             |         |
| REFERENCE: 2,4                 |                  |                                              |                 |                 |                    |           |             |             |         |
|                                |                  | [R2] INDICATES CHANGES MADE IN THIS REVISION |                 |                 |                    |           |             |             |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.  
4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.  
5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.



| EQUIPMENT DESCRIPTION          |                  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION   |                    |                    |                    |           |                |                |         |
|--------------------------------|------------------|----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |                  | PARAMETER                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                  |                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2GTS*PDT5A       | OP.TIME:                                     | 100 DAYS           | 100DAYS[R2]        | 3                  | 2,6       | TEST-SIM       | YES            |         |
| SPEC NO.:                      | C071M            | TEMP (F):                                    |                    |                    |                    |           |                |                |         |
| SYSTEM:                        | GAS TREATMENT    | NORMAL                                       | 104/87 [R2]        | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                |                  | ABNORMAL                                     | NA [R2]            | 120 [R2]           | 1                  | 2         | TEST-SIM       | NA             | NO      |
| TYPE: (DESCRIPTION)            |                  | ACCIDENT                                     | NA                 | 318                | 1                  | 2         | TEST-SIM       | YES            |         |
| FLOW TRANSMITTER               |                  | PRESS (PSIG)                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                |                  | NORMAL                                       | ATMOS              | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |                  | ABNORMAL                                     | ATMOS              | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER:                  | ROSEMOUNT        | ACCIDENT                                     | NA                 | 73                 | 1                  | 2         | TEST-SIM       | YES            |         |
| MODEL NO.:                     | 1153DB3          | RH (%)                                       |                    |                    |                    |           |                |                | NOTE 1  |
|                                |                  | NORMAL                                       | 90 [R2]            | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |                  | ABNORMAL                                     | 90 [R2]            | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -         |                  | ACCIDENT                                     | NA                 | 100                | 1                  | 2         | TEST-SIM       | NA             |         |
| SENSE PRESSURE DIFF BET        |                  | RADIATION:                                   |                    |                    |                    |           |                |                | NOTE 1  |
| RB AND OUTDOOR CONDITION       |                  | NORM GAMMA                                   | 1.34E              |                    | 1                  |           |                | NA             | NOTE 5  |
|                                |                  | ACC GAMMA                                    | 9.3E               | 2.2E7              | 5                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                      | A                | NORM BETA                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                  | ACC BETA                                     | 1.1E2              |                    | 5                  |           |                | YES            | NOTE 3  |
|                                |                  | NEUTRON                                      | NA                 |                    | 1                  |           |                | YES            |         |
|                                |                  | SPRAY                                        | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |         |
| ACCURACY - -                   | NOTE 4           | SUBMERGENCE                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                          | 0.25% CALIB SPAN |                                              |                    |                    |                    |           |                |                |         |
| DEMO:                          | 20.8% CALIB SPAN |                                              |                    |                    |                    |           |                |                |         |
|                                | [R2]             |                                              |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | S6261355         |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA               |                                              |                    |                    |                    |           |                |                |         |
| SPRAY:                         | NA               |                                              |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                  |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE (OR) SPRAY         |                  |                                              |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                  |                                              |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                  |                                              |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                  |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                  |                                              |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                  |                                              |                    |                    |                    |           |                |                |         |
| (YEARS): 20                    |                  |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                 |                  |                                              |                    |                    |                    |           |                |                |         |
|                                |                  | [R2] INDICATES CHANGES MADE IN THIS REVISION |                    |                    |                    |           |                |                |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.  
4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.  
5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       |                  | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|-------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                             |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                                  | 26TS*PDT5B       | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 100 DAYS    | 100DAYS[R2]     | 3               | 2,6                |           | TEST-SIM    | YES         |         |
| SPEC NO.:                                                   | C071M            | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                                                     | GAS TREATMENT    | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 104/87 [R2] | 120             | 1               | 2                  |           | TEST-SIM    | NA          | NOTE 2  |
|                                                             |                  | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NA [R2]     | 120 [R2]        | 1               | 2                  |           | TEST-SIM    | NA          |         |
|                                                             |                  | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NA          | 318             | 1               | 2                  |           | TEST-SIM    | NA[R2]      |         |
| TYPE: (DESCRIPTION)                                         |                  | PRESS(PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |                 |                 |                    |           |             |             | NOTE 1  |
| PRESSURE DIFFERENTIAL TRANSMITTER                           |                  | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ATMOS       | ATM             | 1               | 2                  |           | TEST-SIM    | NA          |         |
|                                                             |                  | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ATMOS       | ATM             | 1               | 2                  |           | TEST-SIM    | NA          |         |
| MANUFACTURER:                                               | ROSEMOUNT        | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NA          | 73              | 1               | 2                  |           | TEST-SIM    | NA[R2]      |         |
|                                                             |                  | RH (%):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |                 |                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                                                  | 1153DB3          | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 50          | 95              | 1               | 2                  |           | TEST-SIM    | NA          |         |
|                                                             |                  | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 50          | 95              | 1               | 2                  |           | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -                                      |                  | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NA          | 100             | 1               | 2                  |           | TEST-SIM    | NA          |         |
| SENSE PRESSURE DIFF BET RB AND OUTDOOR CONDITION            |                  | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |                 |                 |                    |           |             |             | NOTE 1  |
|                                                             |                  | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1           |                 | 1               |                    |           |             | NA          | NOTE 5  |
|                                                             |                  | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 9.3E        | 2.2E7           | 5               | 2                  |           | TEST-SIM    | YES         |         |
| OP. CODE: A                                                 |                  | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | N           |                 | 1               |                    |           |             | NA          |         |
|                                                             |                  | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1.1E2       |                 | 5               |                    |           |             | YES         | NOTE 3  |
|                                                             |                  | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | NA          |                 | 1               |                    |           |             | YES         |         |
|                                                             |                  | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NA          | YES             | NA              | 2                  |           | TEST-SIM    | NA          |         |
| ACCURACY - - NOTE 4                                         |                  | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NA          | NA              | NA              | NA                 |           | NA          | NA          |         |
| SPEC:                                                       | 0.25% CALIB SPAN |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                 |                 |                    |           |             |             |         |
| DEMO:                                                       | 20.8% CALIB SPAN |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                 |                 |                    |           |             |             |         |
| ZONE NO.:                                                   | S6261355         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                                | NA               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                 |                 |                    |           |             |             |         |
| SPRAY:                                                      | NA               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY             |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - - REFERENCE: 2                           |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - - (YEARS): 20 REFERENCE: 2,4             |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                 |                 |                    |           |             |             |         |
|                                                             |                  | <p>DOCUMENT REFERENCE:</p> <ol style="list-style-type: none"> <li>EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]</li> <li>VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E<br/>SDDF # IEEE 7.131-5000D<br/>SDDF # IEEE 7.131-5000B</li> <li>EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 27-15-C1</li> <li>EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028</li> <li>CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P</li> <li>EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005</li> </ol> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.<br/>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.<br/>3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.<br/>4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.<br/>5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.</p> |             |                 |                 |                    |           |             |             |         |
|                                                             |                  | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |                 |                 |                    |           |             |             |         |



### ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                         | DOCUMENT REFERENCE |                 |                 |           |           |             |             | REMARKS |  |
|--------------------------------|-------------------------|--------------------|-----------------|-----------------|-----------|-----------|-------------|-------------|---------|--|
|                                |                         | PARAMETER          | SPECIFIED VALUE | QUALIFIED VALUE | SPECIFIED | QUALIFIED | QUAL METHOD | MARGIN DEMO |         |  |
| EQUIP NO.:                     | 2SFC*FT36A              | OP.TIME:           | NA              | 100DAYS[R2]     | 3         | 2,6       | TEST-SIMCR2 | YES         |         |  |
| SPEC NO.:                      | C071M                   | TEMP (F):          |                 |                 |           |           |             |             | NOTE 1  |  |
| SYSTEM:                        | SPENT FUEL POOL COOLING | NORMAL             | 104/93          | 120             | 1         | 2         | TEST-SIMCR2 | NA          | NOTE 2  |  |
|                                |                         | ABNORMAL           | 106             | 120             | 1         | 2         | TEST-SIMCR2 | NA          |         |  |
|                                |                         | ACCIDENT           | 200             | 318             | 1         | 2         | TEST-SIMCR2 | YES         |         |  |
| TYPE: (DESCRIPTION)            |                         | PRESS(PSIG)        |                 |                 |           |           |             |             | NOTE 1  |  |
| FLOW TRANSMITTER               |                         | NORMAL             | -.25"W.G.       | ATM             | 1         | 2         | TEST-SIMCR2 | NA          |         |  |
|                                |                         | ABNORMAL           | -.25"W.G.       | ATM             | 1         | 2         | TEST-SIMCR2 | NA          |         |  |
| MANUFACTURER: ROSEMOUNT        |                         | ACCIDENT           | 2.8             | 73              | 1         | 2         | TEST-SIMCR2 | YES         |         |  |
|                                |                         | RH (%):            |                 |                 |           |           |             |             | NOTE 1  |  |
| MODEL NO.:                     | 1153DB6                 | NORMAL             | 50              | 95              | 1         | 2         | TEST-SIMCR2 | NA          |         |  |
|                                |                         | ABNORMAL           | 50              | 95              | 1         | 2         | TEST-SIMCR2 | NA          |         |  |
| SAFETY FUNCTION: - - -         |                         | ACCIDENT           | 100             | 100             | 1         | 2         | TEST-SIMCR2 | NA          |         |  |
| TRANSMIT SF POOL CLG SYS       |                         | RADIATION:         |                 |                 |           |           |             |             | NOTE 1  |  |
| FLOW L                         |                         | NORM GAMMA         | 1.0E6           |                 | 1         |           |             | NA          | NOTE 5  |  |
|                                |                         | ACC GAMMA          | 1.65E7          | 2.2E7           | 5         | 2         | TEST-SIMCR2 | YES         |         |  |
| OP. CODE: B                    |                         | NORM BETA          | NA              |                 | 1         |           |             | NA          |         |  |
|                                |                         | ACC BETA           | 6.1E6           |                 | 1         |           |             | YES         | NOTE 3  |  |
|                                |                         | NEUTRON            | NA              |                 | 1         |           |             | NA          |         |  |
|                                |                         | SPRAY              | NA              | YES             | NA        | 2         | TEST-SIMCR2 | NA          |         |  |
| ACCURACY - - NOTE 4            |                         | SUBMERGENCE        | NA              | NA              | NA        | NA        | NA          | NA          |         |  |
| SPEC: 0.25% CALIB SPAN         |                         |                    |                 |                 |           |           |             |             |         |  |
| DEMO: 5.5% CALIB SPAN          |                         |                    |                 |                 |           |           |             |             |         |  |
|                                | [R2]                    |                    |                 |                 |           |           |             |             |         |  |
| ZONE NO.:                      | SC215122                |                    |                 |                 |           |           |             |             |         |  |
| SUBMERGENCE:                   | NA                      |                    |                 |                 |           |           |             |             |         |  |
| SPRAY:                         | NA                      |                    |                 |                 |           |           |             |             |         |  |
| EQUIPMENT NOT SUBJECT TO       |                         |                    |                 |                 |           |           |             |             |         |  |
| SUBMERGENCE (OR) SPRAY         |                         |                    |                 |                 |           |           |             |             |         |  |
| DOCUMENTATION ACCEPTABILITY:   |                         |                    |                 |                 |           |           |             |             |         |  |
| ACCEPTABLE TO NUREG 0598,CAT I |                         |                    |                 |                 |           |           |             |             |         |  |
| MAINT/SURVEILL - - -           |                         |                    |                 |                 |           |           |             |             |         |  |
| REFERENCE: 2                   |                         |                    |                 |                 |           |           |             |             |         |  |
| QUALIFIED LIFE - - -           |                         |                    |                 |                 |           |           |             |             |         |  |
| (YEARS): 20                    |                         |                    |                 |                 |           |           |             |             |         |  |
| REFERENCE: 2,4                 |                         |                    |                 |                 |           |           |             |             |         |  |
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| EQUIPMENT DESCRIPTION                        |                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |              |             |         |
|----------------------------------------------|-------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|--------------|-------------|---------|
|                                              |                         | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD  | MARGIN DEMO | REMARKS |
|                                              |                         |                                            |                 |                 | SPECIFIED          | QUALIFIED |              |             |         |
| EQUIP NO.:                                   | 2SFC*FT36B              | OP.TIME:                                   | NA              | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIM[R2] | YES         |         |
| SPEC NO.:                                    | C071M                   | TEMP (F):                                  |                 |                 |                    |           |              |             |         |
| SYSTEM:                                      | SPENT FUEL POOL COOLING | NORMAL                                     | 104/93          | 120             | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 1  |
|                                              |                         | ABNORMAL                                   | 106             | 120             | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)                          |                         | ACCIDENT                                   | 200             | 318             | 1                  | 2         | TEST-SIM[R2] | YES         |         |
| FLOW TRANSMITTER                             |                         | PRESS(PSIG)                                |                 |                 |                    |           |              |             | NOTE 1  |
|                                              |                         | NORMAL                                     | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                              |                         | ABNORMAL                                   | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| MANUFACTURER:                                | ROSEMOUNT               | ACCIDENT                                   | 2.8             | 73              | 1                  | 2         | TEST-SIM[R2] | YES         |         |
|                                              |                         | RH (%)                                     |                 |                 |                    |           |              |             | NOTE 1  |
| MODEL NO.:                                   | 1153DB6                 | NORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                              |                         | ABNORMAL                                   | 50              | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| SAFETY FUNCTION:                             | - - -                   | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| TRANSMIT SF POOL CLG SYS                     |                         | RADIATION:                                 |                 |                 |                    |           |              |             | NOTE 1  |
| FLOW L                                       |                         | NORM GAMMA                                 | 1.0E6           |                 | 1                  |           |              | NA          | NOTE 5  |
|                                              |                         | ACC GAMMA                                  | 1.65E7          | 2.2E7           | 5                  | 2         | TEST-SIM[R2] | YES         |         |
| OP. CODE:                                    | B                       | NORM BETA                                  | NA              |                 | 1                  |           |              | NA          |         |
|                                              |                         | ACC BETA                                   | 6.1E6           |                 | 1                  |           |              | YES         | NOTE 3  |
|                                              |                         | NEUTRON                                    | NA              |                 | 1                  |           |              | NA          |         |
|                                              |                         | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIM[R2] | NA          |         |
| ACCURACY - -                                 | NOTE 4                  | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA           | NA          |         |
| SPEC:                                        | 0.25% CALIB SPAN        |                                            |                 |                 |                    |           |              |             |         |
| DEMO:                                        | 5.5% CALIB SPAN         |                                            |                 |                 |                    |           |              |             |         |
|                                              | [R2]                    |                                            |                 |                 |                    |           |              |             |         |
| ZONE NO.:                                    | SC215122                |                                            |                 |                 |                    |           |              |             |         |
| SUBMERGENCE:                                 | NA                      |                                            |                 |                 |                    |           |              |             |         |
| SPRAY:                                       | NA                      |                                            |                 |                 |                    |           |              |             |         |
| EQUIPMENT NOT SUBJECT TO                     |                         |                                            |                 |                 |                    |           |              |             |         |
| SUBMERGENCE (OR) SPRAY                       |                         |                                            |                 |                 |                    |           |              |             |         |
| DOCUMENTATION ACCEPTABILITY:                 |                         |                                            |                 |                 |                    |           |              |             |         |
| ACCEPTABLE TO NUREG 0588,CAT 1               |                         |                                            |                 |                 |                    |           |              |             |         |
| MAINT/SURVEILL - - -                         |                         |                                            |                 |                 |                    |           |              |             |         |
| REFERENCE: 2                                 |                         |                                            |                 |                 |                    |           |              |             |         |
| QUALIFIED LIFE - - -                         |                         |                                            |                 |                 |                    |           |              |             |         |
| (YEARS): 20                                  |                         |                                            |                 |                 |                    |           |              |             |         |
| REFERENCE: 2,4                               |                         |                                            |                 |                 |                    |           |              |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION |                         |                                            |                 |                 |                    |           |              |             |         |

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.  
4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.  
5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.



| EQUIPMENT DESCRIPTION                                       |                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
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|                                                             |                         | PARAMETER                                                                                   | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                          |
|                                                             |                         |                                                                                             |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                  |
| EQUIP NO.:                                                  | 2SFC*FT58A [R1]         | OP.TIME:                                                                                    | 100 DAYS           | 100DAYS[R2]        | 3                  | 2,4       | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                  |
| SPEC NO.:                                                   | C071M                   | TEMP (F):                                                                                   | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1                                                                                                                                                                                                                                                         |
| SYSTEM:                                                     | SPENT FUEL POOL COOLING | NORMAL                                                                                      | 120/108            | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                           |
|                                                             |                         | ABNORMAL                                                                                    | 108                | 120                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                  |
| TYPE: (DESCRIPTION)                                         |                         | ACCIDENT                                                                                    | 175                | 318                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                  |
| FLOW TRANSMITTER                                            |                         | PRESS (PSIG)                                                                                | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1                                                                                                                                                                                                                                                         |
|                                                             |                         | NORMAL                                                                                      | -.25"WG            | ATM                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                  |
|                                                             |                         | ABNORMAL                                                                                    | -.25"WG            | NA                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                  |
| MANUFACTURER: ROSEMOUNT                                     |                         | ACCIDENT                                                                                    | 2.8                | 73                 | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                  |
|                                                             |                         | RH (%):                                                                                     | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1                                                                                                                                                                                                                                                         |
| MODEL NO.:                                                  | 1153DB5                 | NORMAL                                                                                      | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                  |
|                                                             |                         | ABNORMAL                                                                                    | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                  |
| SAFETY FUNCTION: - - -                                      |                         | ACCIDENT                                                                                    | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                  |
| TRANSMIT SFC PMP DISCH FLOW [R1]                            |                         | RADIATION:                                                                                  | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1                                                                                                                                                                                                                                                         |
|                                                             |                         | NORM GAMMA                                                                                  | 3.25E5             |                    | 1                  |           |                | NA             | NOTE 5                                                                                                                                                                                                                                                           |
|                                                             |                         | ACC GAMMA                                                                                   | 5.0E5              | 2.2E7              | 5                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                  |
| OP. CODE: A                                                 |                         | NORM BETA                                                                                   | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                                                  |
|                                                             |                         | ACC BETA                                                                                    | 6.1E6              |                    | 5                  |           |                | YES            | NOTE 3                                                                                                                                                                                                                                                           |
|                                                             |                         | NEUTRON                                                                                     | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                                                  |
|                                                             |                         | SPRAY                                                                                       | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                  |
| ACCURACY - - NOTE 4                                         |                         | SUBMERGENCE                                                                                 | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                  |
| SPEC: 0.25% CALIB SPAN                                      |                         |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| DEMO: 4.9% CALIB SPAN                                       |                         |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| ZONE NO.:                                                   | SC289162                |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| SUBMERGENCE:                                                | NA                      | DOCUMENT REFERENCE:                                                                         |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| SPRAY:                                                      | NA                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2] |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                     |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY             |                         | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E                       |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                           |
|                                                             |                         | SDDF # IEEE 7.131-5000D                                                                     |                    |                    |                    |           |                |                | 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.                                                                                                                                                                                     |
|                                                             |                         | SDDF # IEEE 7.131-5000B                                                                     |                    |                    |                    |           |                |                | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION. |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                         | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 34-2-C1                                  |                    |                    |                    |           |                |                | 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.                                                                                                                                                                                  |
|                                                             |                         | 4. EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                                             |                         | 5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| MAINT/SURVEILL - - -                                        |                         |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| REFERENCE: 2                                                |                         |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| QUALIFIED LIFE - - -                                        |                         |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| (YEARS): 10                                                 |                         |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
| REFERENCE: 2                                                |                         |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |
|                                                             |                         | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                  |



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QUAL REF #\_C071MBP\_ REV 2

| EQUIPMENT DESCRIPTION                           |                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|-------------------------------------------------|-------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                 |                         | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                 |                         |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                      | 2SFC*FT58B [R1]         | OP.TIME:                                   | 100 DAYS        | 100DAYS[R2]     | 3                  | 2,4       | TEST-SIM    | YES         |         |
| SPEC NO.:                                       | C071M                   | TEMP (F):                                  |                 |                 |                    |           |             |             |         |
| SYSTEM:                                         | SPENT FUEL POOL COOLING | NORMAL                                     | 120/108         | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
|                                                 |                         | ABNORMAL                                   | 108             | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)                             |                         | ACCIDENT                                   | 175             | 318             | 1                  | 2         | TEST-SIM    | YES         |         |
| FLOW TRANSMITTER                                |                         | PRESS(PSIG)                                |                 |                 |                    |           |             |             | NOTE 1  |
|                                                 |                         | NORMAL                                     | -.25"WG         | ATM             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                 |                         | ABNORMAL                                   | -.25"WG         | NA              | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                                   | ROSEMOUNT               | ACCIDENT                                   | 2.8             | 73              | 1                  | 2         | TEST-SIM    | YES         |         |
| MODEL NO.:                                      | 1153DB5                 | RH (%)                                     |                 |                 |                    |           |             |             | NOTE 1  |
|                                                 |                         | NORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                 |                         | ABNORMAL                                   | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:                                | - - -                   | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |         |
| TRANSMIT SFC PMP DISCH FLOW [R1]                |                         | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1  |
|                                                 |                         | NORM GAMMA                                 | 3.25E5          |                 | 1                  |           |             | NA          | NOTE 5  |
|                                                 |                         | ACC GAMMA                                  | 5.0E5           | 2.2E7           | 5                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                                       | A                       | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                                 |                         | ACC BETA                                   | 6.1E6           |                 | 5                  |           |             | YES         | NOTE 3  |
|                                                 |                         | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                                 |                         | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY - -                                    | NOTE 4                  | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC:                                           | 0.25% CALIB SPAN        |                                            |                 |                 |                    |           |             |             |         |
| DEMO:                                           | 4.9% CALIB SPAN         |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.:                                       | SC289161                |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                    | NA                      |                                            |                 |                 |                    |           |             |             |         |
| SPRAY:                                          | NA                      |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY |                         |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                    |                         |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                  |                         |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                            |                         |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE:                                      | 2                       |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                            |                         |                                            |                 |                 |                    |           |             |             |         |
| (YEARS):                                        | 10                      |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE:                                      | 2                       |                                            |                 |                 |                    |           |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION    |                         |                                            |                 |                 |                    |           |             |             |         |

DOCUMENT REFERENCE:

1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E  
SDDF # IEEE 7.131-5000D  
SDDF # IEEE 7.131-5000B
3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 34-2-C1
4. EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005
5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
- 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
- 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.
- 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.
- 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.



QUAL REF #\_C071MBQ\_ REV 2

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| EQUIPMENT DESCRIPTION          |                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                  |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|--------------------------------|-------------------------|---------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                |                         | PARAMETER                                                                                   | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                                          |
|                                |                         |                                                                                             |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                                                  |
| EQUIP NO.:                     | 2SFC*LT32A              | OP.TIME:                                                                                    | 100 DAYS        | 100DAYS[R2]     | 3                  | 2,4       | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                  |
| SPEC NO.:                      | C071M                   | TEMP (F):                                                                                   |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| SYSTEM:                        | SPENT FUEL POOL COOLING | NORMAL                                                                                      | 120/98 [R2]     | 120             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1                                                                                                                                                                                                                                                           |
|                                |                         | ABNORMAL                                                                                    | 197             | 203 [R2]        | 1                  | 2,5       | TEST-SIM    | NA          | NOTE 2                                                                                                                                                                                                                                                           |
| TYPE: (DESCRIPTION)            |                         | ACCIDENT                                                                                    | 175             | 316             | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                  |
| LEVEL TRANSMITTER              |                         | PRESS (PSIG)                                                                                |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
|                                |                         | NORMAL                                                                                      | -.25"WG         | ATM             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
|                                |                         | ABNORMAL                                                                                    | -.25"WG         | ATM             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| MANUFACTURER:                  | ROSEMOUNT               | ACCIDENT                                                                                    | 2.8             | 73              | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                  |
|                                |                         | RH (%):                                                                                     |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
| MODEL NO.:                     | 1153D85                 | NORMAL                                                                                      | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
|                                |                         | ABNORMAL                                                                                    | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| SAFETY FUNCTION:               |                         | ACCIDENT                                                                                    | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| TRANSMIT SF POOL SURGE TANK    |                         | RADIATION:                                                                                  |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
| WATER LVL                      |                         | NORM GAMMA                                                                                  | 4.5E2           |                 | 1                  |           |             | NA          | NOTE 5                                                                                                                                                                                                                                                           |
|                                |                         | ACC GAMMA                                                                                   | 5E5             | 2.2E7           | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                  |
| OP. CODE:                      | A                       | NORM BETA                                                                                   | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                                                  |
|                                |                         | ACC BETA                                                                                    | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3                                                                                                                                                                                                                                                           |
|                                |                         | NEUTRON                                                                                     | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                                                  |
|                                |                         | SPRAY                                                                                       | NA              | YES             | NA                 | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                  |
| ACCURACY --                    | NOTE 4                  | SUBMERGENCE                                                                                 | NA              | NA              | NA                 | NA        | NA          | NA          |                                                                                                                                                                                                                                                                  |
| SPEC:                          | 0.25% CALIB SPAN        |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| DEMO:                          | 3.0% CALIB SPAN         |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| ZONE NO.:                      | SC328197                |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| SUBMERGENCE:                   | NA                      | DOCUMENT REFERENCE:                                                                         |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| SPRAY:                         | NA                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2] |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                     |
| EQUIPMENT NOT SUBJECT TO       |                         | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E                       |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                           |
| SUBMERGENCE (OR) SPRAY         |                         | SDDF # IEEE 7.131-5000D                                                                     |                 |                 |                    |           |             |             | 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.                                                                                                                                                                                     |
|                                |                         | SDDF # IEEE 7.131-5000B                                                                     |                 |                 |                    |           |             |             | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION. |
| DOCUMENTATION ACCEPTABILITY:   |                         | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 34-2-C5                                  |                 |                 |                    |           |             |             | 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.                                                                                                                                                                                  |
| ACCEPTABLE TO NUREG 0588,CAT I |                         | 4. EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                |                         | 5. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028                                    |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| MAINT/SURVEILL --              |                         |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| REFERENCE: 2                   |                         |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| QUALIFIED LIFE --              |                         |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| (YEARS): 10                    |                         |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| REFERENCE: 2                   |                         |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                |                         | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



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| EQUIPMENT DESCRIPTION          |                            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION   |                    |                    |                    |           |                |                |         |
|--------------------------------|----------------------------|----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |                            | PARAMETER                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                            |                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2SFC*PT3A [R1]             | OP.TIME:                                     | 100 DAYS           | 100DAYS[R2]        | 3                  | 2,6       | TEST-SIM[R2]   | YES            |         |
| SPEC NO.:                      | C071M                      | TEMP (F):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                        | SPENT FUEL POOL<br>COOLING | NORMAL                                       | 104/85             | 120                | 1                  | 2         | TEST-SIM[R2]   | NA             | NOTE 2  |
|                                |                            | ABNORMAL                                     | 108                | 120                | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
| TYPE: (DESCRIPTION)            | PRESSURE TRANSMITTER       | ACCIDENT                                     | 200                | 318                | 1                  | 2         | TEST-SIM[R2]   | YES            |         |
|                                |                            | PRESS(PSIG)                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                |                            | NORMAL                                       | -.25"WG            | ATM                | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
|                                |                            | ABNORMAL                                     | -.25"WG            | ATM                | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
| MANUFACTURER:                  | ROSEMOUNT                  | ACCIDENT                                     | 2.8                | 73                 | 1                  | 2         | TEST-SIM[R2]   | YES            |         |
|                                |                            | RH (%):                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.:                     | 1153GB6                    | NORMAL                                       | 50                 | 95                 | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
|                                |                            | ABNORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
| SAFETY FUNCTION:               | - - -                      | ACCIDENT                                     | 100                | 100                | 1                  | 2         | TEST-SIM[R2]   | NA             |         |
| TRANSMIT SF POOL CIRC PP A     |                            | RADIATION:                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SUCT PRESS                     |                            | NORM GAMMA                                   | 4E6                |                    | 1,5                |           |                | NA             | NOTE 5  |
|                                |                            | ACC GAMMA                                    | 7.29E5             | 2.2E7              | 1,5                | 2         | TEST-SIM[R2]   | YES            |         |
| OP. CODE:                      | A                          | NORM BETA                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                            | ACC BETA                                     | 6.1E6              |                    | 1                  |           |                | YES            | NOTE 3  |
|                                |                            | NEUTRON                                      | NA                 |                    | 1                  |           |                | NA             |         |
|                                |                            | SPRAY                                        | NA                 | YES                | NA                 | 2         | TEST-SIM[R2]   | NA             |         |
| ACCURACY - -                   | NOTE 4                     | SUBMERGENCE                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC:                          | 0.25% CALIB SPAN           |                                              |                    |                    |                    |           |                |                |         |
| DEMO:                          | 4.8% CALIB SPAN            |                                              |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | SC261145                   |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA                         |                                              |                    |                    |                    |           |                |                |         |
| SPRAY:                         | NA                         |                                              |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                            |                                              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE (OR) SPRAY         |                            |                                              |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                            |                                              |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                            |                                              |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                            |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                            |                                              |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                            |                                              |                    |                    |                    |           |                |                |         |
| (YEARS): 20                    |                            |                                              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2,4                 |                            |                                              |                    |                    |                    |           |                |                |         |
|                                |                            | [R2] INDICATES CHANGES MADE IN THIS REVISION |                    |                    |                    |           |                |                |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.

4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.

5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[[R2] INDICATES CHANGES MADE IN THIS REVISION



QUAL REF #\_C071MBU\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION                                       |                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                  |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             |                         | PARAMETER                                                                                   | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                                          |
|                                                             |                         |                                                                                             |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                                                  |
| EQUIP NO.:                                                  | 2SFC*PT30A              | OP.TIME:                                                                                    | 100 DAYS        | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIMCR2 | YES         |                                                                                                                                                                                                                                                                  |
| SPEC NO.:                                                   | C071M                   | TEMP (F):                                                                                   |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
| SYSTEM:                                                     | SPENT FUEL POOL COOLING | NORMAL                                                                                      | 104/85          | 120             | 1                  | 2         | TEST-SIMCR2 | NA          | NOTE 2                                                                                                                                                                                                                                                           |
|                                                             |                         | ABNORMAL                                                                                    | 87              | 120             | 1                  | 2,4       | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
| TYPE: (DESCRIPTION)                                         |                         | ACCIDENT                                                                                    | 200             | 318             | 1                  | 2         | TEST-SIMCR2 | YES         |                                                                                                                                                                                                                                                                  |
| PRESSURE TRANSMITTER                                        |                         | PRESS (PSIG)                                                                                |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
|                                                             |                         | NORMAL                                                                                      | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
|                                                             |                         | ABNORMAL                                                                                    | -.25"W.G.       | ATM             | 1                  | 2         | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
| MANUFACTURER: ROSEMOUNT                                     |                         | ACCIDENT                                                                                    | 2.8             | 73              | 1                  | 2         | TEST-SIMCR2 | YES         |                                                                                                                                                                                                                                                                  |
|                                                             |                         | RH (%):                                                                                     |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
| MODEL NO.:                                                  | 1153GBB                 | NORMAL                                                                                      | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
|                                                             |                         | ABNORMAL                                                                                    | 50              | 95              | 1                  | 2         | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
| SAFETY FUNCTION: - - -                                      |                         | ACCIDENT                                                                                    | 100             | 100             | 1                  | 2         | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
| TRANSMIT SF POOL CIRC PMP DISCH PRESS                       |                         | RADIATION:                                                                                  |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                           |
|                                                             |                         | NORM GAMMA                                                                                  | 4E6             |                 | 1,5                |           |             | NA          | NOTE 5                                                                                                                                                                                                                                                           |
|                                                             |                         | ACC GAMMA                                                                                   | 7.29E5          | 2.2E7           | 1,5                | 2         | TEST-SIMCR2 | YES         |                                                                                                                                                                                                                                                                  |
| OP. CODE: A                                                 |                         | NORM BETA                                                                                   | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                                                  |
|                                                             |                         | ACC BETA                                                                                    | 6.1E6           |                 | 1                  |           |             | YES         | NOTE 3                                                                                                                                                                                                                                                           |
|                                                             |                         | NEUTRON                                                                                     | NA              |                 | 1                  |           |             | NA          |                                                                                                                                                                                                                                                                  |
|                                                             |                         | SPRAY                                                                                       | NA              | YES             | NA                 | 2         | TEST-SIMCR2 | NA          |                                                                                                                                                                                                                                                                  |
| ACCURACY - -                                                | NOTE 4                  | SUBMERGENCE                                                                                 | NA              | NA              | NA                 | NA        | NA          | NA          |                                                                                                                                                                                                                                                                  |
| SPEC:                                                       | 0.25% CALIB SPAN        |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| DEMO:                                                       | 7.7% CALIB SPAN         |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| ZONE NO.:                                                   | SC261145                |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| SUBMERGENCE:                                                | NA                      | DOCUMENT REFERENCE:                                                                         |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                     |
| SPRAY:                                                      | NA                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2] |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                           |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY             |                         | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E                       |                 |                 |                    |           |             |             | 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.                                                                                                                                                                                     |
|                                                             |                         | SDDF # IEEE 7.131-5000D                                                                     |                 |                 |                    |           |             |             | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION. |
|                                                             |                         | SDDF # IEEE 7.131-5000B                                                                     |                 |                 |                    |           |             |             | 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.                                                                                                                                                                                  |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                         | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 34-2-C1                                  |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                                             |                         | 4. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028                                    |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                                             |                         | 5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| MAINT/SURVEILL - - -                                        |                         | 6. EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| REFERENCE: 2                                                |                         |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| QUALIFIED LIFE - - -                                        |                         |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| (YEARS): 20                                                 |                         |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
| REFERENCE: 2,4                                              |                         |                                                                                             |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |
|                                                             |                         | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                  |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       |                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION   |                 |                 |                    |           |              |             |         |
|-------------------------------------------------------------|-------------------------|----------------------------------------------|-----------------|-----------------|--------------------|-----------|--------------|-------------|---------|
|                                                             |                         | PARAMETER                                    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD  | MARGIN DEMO | REMARKS |
|                                                             |                         |                                              |                 |                 | SPECIFIED          | QUALIFIED |              |             |         |
| EQUIP NO.:                                                  | 2SFC*PT30B              | OP.TIME:                                     | 100 DAYS        | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIM[R2] | YES         |         |
| SPEC NO.:                                                   | C071M                   | TEMP (F):                                    |                 |                 |                    |           |              |             |         |
| SYSTEM:                                                     | SPENT FUEL POOL COOLING | NORMAL                                       | 104/85          | 120             | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 1  |
|                                                             |                         | ABNORMAL                                     | 87              | 120             | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)                                         |                         | ACCIDENT                                     | 200             | 318             | 1                  | 2         | TEST-SIM[R2] | YES         |         |
| PRESSURE TRANSMITTER                                        |                         | PRESS(PSIG)                                  |                 |                 |                    |           |              |             | NOTE 1  |
|                                                             |                         | NORMAL                                       | -.25"WG         | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                                             |                         | ABNORMAL                                     | -.25"WG         | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| MANUFACTURER:                                               | ROSEMOUNT               | ACCIDENT                                     | 2.8             | 73              | 1                  | 2         | TEST-SIM[R2] | YES         |         |
| MODEL NO.:                                                  | 1153GB8                 | RH (%)                                       |                 |                 |                    |           |              |             | NOTE 1  |
|                                                             |                         | NORMAL                                       | 50              | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                                             |                         | ABNORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| SAFETY FUNCTION: - - -                                      |                         | ACCIDENT                                     | 100             | 100             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| TRANSMIT SF POOL CIRC PMP DISCH PRESS                       |                         | RADIATION:                                   |                 |                 |                    |           |              |             | NOTE 1  |
|                                                             |                         | NORM GAMMA                                   | 4E6             |                 | 1                  |           |              | NA          | NOTE 5  |
|                                                             |                         | ACC GAMMA                                    | 1.12E6          | 2.2E7           | 5                  | 2         | TEST-SIM[R2] | YES         |         |
| OP. CODE:                                                   | A                       | NORM BETA                                    | NA              |                 | 1                  |           |              | NA          |         |
|                                                             |                         | ACC BETA                                     | 6.1E6           |                 | 1                  |           |              | YES         | NOTE 3  |
|                                                             |                         | NEUTRON                                      | NA              |                 | 1                  |           |              | NA          |         |
|                                                             |                         | SPRAY                                        | NA              | YES             | NA                 | 2         | TEST-SIM[R2] | NA          |         |
| ACCURACY - -                                                | NOTE 4                  | SUBMERGENCE                                  | NA              | NA              | NA                 | NA        | NA           | NA          |         |
| SPEC:                                                       | 0.25% CALIB SPAN        |                                              |                 |                 |                    |           |              |             |         |
| DEMO:                                                       | 7.7% CALIB SPAN         |                                              |                 |                 |                    |           |              |             |         |
| ZONE NO.:                                                   | SC261145                |                                              |                 |                 |                    |           |              |             |         |
| SUBMERGENCE:                                                | NA                      |                                              |                 |                 |                    |           |              |             |         |
| SPRAY:                                                      | NA                      |                                              |                 |                 |                    |           |              |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY             |                         |                                              |                 |                 |                    |           |              |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                         |                                              |                 |                 |                    |           |              |             |         |
| MAINT/SURVEILL - - - REFERENCE: 2                           |                         |                                              |                 |                 |                    |           |              |             |         |
| QUALIFIED LIFE - - - (YEARS): 20 REFERENCE: 2,4             |                         |                                              |                 |                 |                    |           |              |             |         |
|                                                             |                         | [R2] INDICATES CHANGES MADE IN THIS REVISION |                 |                 |                    |           |              |             |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.

4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.

5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.



| EQUIPMENT DESCRIPTION                           |                      | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |              |             |         |
|-------------------------------------------------|----------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|--------------|-------------|---------|
|                                                 |                      | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD  | MARGIN DEMO | REMARKS |
|                                                 |                      |                                            |                 |                 | SPECIFIED          | QUALIFIED |              |             |         |
| EQUIP NO.:                                      | 2SWP*PT140A          | OP.TIME:                                   | NA [R2]         | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIM[R2] | YES         |         |
| SPEC NO.:                                       | C071M                | TEMP (F):                                  |                 |                 |                    |           |              |             |         |
| SYSTEM:                                         | SERVICE WATER SYSTEM | NORMAL                                     | 104/92 [R2]     | 120             | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 1  |
|                                                 |                      | ABNORMAL                                   | NA [R2]         | 120             | 1                  | 2,4       | TEST-SIM[R2] | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)                             |                      | ACCIDENT                                   | 175             | 318             | 1                  | 2         | TEST-SIM[R2] | YES         |         |
| PRESSURE TRANSMITTER                            |                      | PRESS (PSIG)                               |                 |                 |                    |           |              |             | NOTE 1  |
|                                                 |                      | NORMAL                                     | -0.25"WG[R2]    | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| MANUFACTURER:                                   | ROSEMOUNT            | ABNORMAL                                   | NA [R2]         | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                                 |                      | ACCIDENT                                   | 2.8             | 73              | 1                  | 2         | TEST-SIM[R2] | YES         |         |
| MODEL NO.:                                      | 1153GB7              | RH (%):                                    |                 |                 |                    |           |              |             | NOTE 1  |
|                                                 |                      | NORMAL                                     | 50 [R2]         | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                                 |                      | ABNORMAL                                   | 50 [R2]         | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| SAFETY FUNCTION:                                | - - -                | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| TRANSMIT SWP TO CCP HT EXCHS PRESS              |                      | RADIATION:                                 |                 |                 |                    |           |              |             | NOTE 1  |
|                                                 |                      | NORM GAMMA                                 | 4.4E2 [R2]      |                 | 1                  |           |              | NA          | NOTE 5  |
|                                                 |                      | ACC GAMMA                                  | 8.85E6          | 2.2E7           | 5                  | 2         | TEST-SIM[R2] | YES         |         |
| OP. CODE:                                       | B [R2]               | NORM BETA                                  | NA              |                 | 1                  |           |              | NA          |         |
|                                                 |                      | ACC BETA                                   | 6.1E6           |                 | 1                  |           |              | YES         | NOTE 3  |
|                                                 |                      | NEUTRON                                    | NA              |                 | 1                  |           |              | NA          |         |
|                                                 |                      | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-SIM[R2] | NA          |         |
| ACCURACY - -                                    | NOTE 4               | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA           | NA          |         |
| SPEC:                                           | 0.25% CALIB SPAN     |                                            |                 |                 |                    |           |              |             |         |
| DEMO:                                           | 4.5% CALIB SPAN      |                                            |                 |                 |                    |           |              |             |         |
| ZONE NO.:                                       | ABN19614             |                                            |                 |                 |                    |           |              |             |         |
| SUBMERGENCE:                                    | NA                   |                                            |                 |                 |                    |           |              |             |         |
| SPRAY:                                          | NA                   |                                            |                 |                 |                    |           |              |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY |                      |                                            |                 |                 |                    |           |              |             |         |
| DOCUMENTATION ACCEPTABILITY:                    |                      |                                            |                 |                 |                    |           |              |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                  |                      |                                            |                 |                 |                    |           |              |             |         |
| MAINT/SURVEILL - - -                            |                      |                                            |                 |                 |                    |           |              |             |         |
| REFERENCE: 2                                    |                      |                                            |                 |                 |                    |           |              |             |         |
| QUALIFIED LIFE - - -                            |                      |                                            |                 |                 |                    |           |              |             |         |
| (YEARS): 20                                     |                      |                                            |                 |                 |                    |           |              |             |         |
| REFERENCE: 2,4                                  |                      |                                            |                 |                 |                    |           |              |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION    |                      |                                            |                 |                 |                    |           |              |             |         |

- DOCUMENT REFERENCE:
1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R2]
  2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 7.131-5000E  
SDDF # IEEE 7.131-5000D  
SDDF # IEEE 7.131-5000B
  3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 9-10-C19
  4. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-028
  5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P
  6. EXTENDING POST ACCIDENT PERIOD CALCULATION NO. 12177-EQS-005

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
- 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
- 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.
- 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.
- 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                        |                      | PARAMETER    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD  | MARGIN DEMO | REMARKS |
|----------------------------------------------|----------------------|--------------|-----------------|-----------------|--------------------|-----------|--------------|-------------|---------|
|                                              |                      |              |                 |                 | SPECIFIED          | QUALIFIED |              |             |         |
| EQUIP NO.:                                   | 2SWP*PT140B          | OP.TIME:     | NA              | 100DAYS[R2]     | 3                  | 2,6       | TEST-SIM[R2] | YES         |         |
| SPEC NO.:                                    | C071M                | TEMP (F):    | - - - -         | - - - -         | - - - -            | - - - -   | - - - -      | - - - -     | NOTE 1  |
| SYSTEM:                                      | SERVICE WATER SYSTEM | NORMAL       | 120/92 [R2]     | 120             | 1                  | 2         | TEST-SIM[R2] | NA          | NOTE 2  |
|                                              |                      | ABNORMAL     | NA [R2]         | 120             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| TYPE: (DESCRIPTION)                          |                      | ACCIDENT     | 175             | 318             | 1                  | 2         | TEST-SIM[R2] | YES         |         |
| PRESSURE TRANSMITTER                         |                      | PRESS (PSIG) | - - - -         | - - - -         | - - - -            | - - - -   | - - - -      | - - - -     | NOTE 1  |
|                                              |                      | NORMAL       | -0.25"WG[R2]    | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                              |                      | ABNORMAL     | NA [R2]         | ATM             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| MANUFACTURER: ROSEMOUNT                      |                      | ACCIDENT     | 2.8             | 73              | 1                  | 2         | TEST-SIM[R2] | YES         |         |
|                                              |                      | RH (%):      | - - - -         | - - - -         | - - - -            | - - - -   | - - - -      | - - - -     | NOTE 1  |
| MODEL NO.:                                   | 1153GB7              | NORMAL       | 50 [R2]         | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
|                                              |                      | ABNORMAL     | NA [R2]         | 95              | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| SAFETY FUNCTION: - - -                       |                      | ACCIDENT     | 100             | 100             | 1                  | 2         | TEST-SIM[R2] | NA          |         |
| TRANSMIT SWP TO CCP HT                       |                      | RADIATION:   | - - - -         | - - - -         | - - - -            | - - - -   | - - - -      | - - - -     | NOTE 1  |
| EXCHS PRESS                                  |                      | NORM GAMMA   | 4.4E2 [R2]      |                 | 1                  |           |              | NA          | NOTE 5  |
|                                              |                      | ACC GAMMA    | 8.85E6          | 2.2E7           | 5                  | 2         | TEST-SIM[R2] | YES         |         |
| OP. CODE: B                                  |                      | NORM BETA    | NA              |                 | 1                  |           |              | NA          |         |
|                                              |                      | ACC BETA     | 6.1E6           |                 | 1                  |           |              | YES         | NOTE 3  |
|                                              |                      | NEUTRON      | NA              |                 | 1                  |           |              | NA          |         |
|                                              |                      | SPRAY        | NA              | YES             | NA                 | 2         | TEST-SIM[R2] | NA          |         |
| ACCURACY - -                                 | NOTE 4               | SUBMERGENCE  | NA              | NA              | NA                 | NA        | NA           | NA          |         |
| SPEC:                                        | 0.25% CALIB SPAN     |              |                 |                 |                    |           |              |             |         |
| DEMO:                                        | 4.5% CALIB SPAN      |              |                 |                 |                    |           |              |             |         |
| ZONE NO.:                                    | ABN19614             |              |                 |                 |                    |           |              |             |         |
| SUBMERGENCE:                                 | NA                   |              |                 |                 |                    |           |              |             |         |
| SPRAY:                                       | NA                   |              |                 |                 |                    |           |              |             |         |
| EQUIPMENT NOT SUBJECT TO                     |                      |              |                 |                 |                    |           |              |             |         |
| SUBMERGENCE (OR) SPRAY                       |                      |              |                 |                 |                    |           |              |             |         |
| DOCUMENTATION ACCEPTABILITY:                 |                      |              |                 |                 |                    |           |              |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I               |                      |              |                 |                 |                    |           |              |             |         |
| MAINT/SURVEILL - - -                         |                      |              |                 |                 |                    |           |              |             |         |
| REFERENCE: 2                                 |                      |              |                 |                 |                    |           |              |             |         |
| QUALIFIED LIFE - - -                         |                      |              |                 |                 |                    |           |              |             |         |
| (YEARS): 10 [R2]                             |                      |              |                 |                 |                    |           |              |             |         |
| REFERENCE: 2,4                               |                      |              |                 |                 |                    |           |              |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION |                      |              |                 |                 |                    |           |              |             |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.

4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SETPOINT CALCULATION.

5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.



19-Feb-86

QUAL REF #\_C071MBY\_\_\_\_\_ REV 1

| EQUIPMENT DESCRIPTION                         |  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                  |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             |         |
|-----------------------------------------------|--|-------------------------------------------------------------------------------------------------------------|-----------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------|-------------|---------|
|                                               |  | PARAMETER                                                                                                   | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE                                                                                                                                                                                                                                                |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                               |  |                                                                                                             |                 |                 | SPECIFIED                                                                                                                                                                                                                                                         | QUALIFIED |             |             |         |
| EQUIP NO.: 2RSS*LT112                         |  | OP.TIME:                                                                                                    | 100 DAYS        | 100DAYS[R1]     | 3                                                                                                                                                                                                                                                                 | 2,6       | TEST-SIM    | YES         |         |
| SPEC NO.: C071M                               |  | TEMP (F):                                                                                                   |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             | NOTE 1  |
| SYSTEM:                                       |  | NORMAL                                                                                                      | 104/85          | 120             | 1                                                                                                                                                                                                                                                                 | 2         | TEST-SIM    | NA          | NOTE 2  |
| REMOTE SHUTDOWN                               |  | ABNORMAL                                                                                                    | 87              | 120             | 1                                                                                                                                                                                                                                                                 | 2         | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)                           |  | ACCIDENT                                                                                                    | 200             | 318             | 1                                                                                                                                                                                                                                                                 | 2         | TEST-SIM    | YES         |         |
| LEVEL TRANSMITTER                             |  | PRESS (PSIG)                                                                                                |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             | NOTE 1  |
|                                               |  | NORMAL                                                                                                      | -.25"WG         | ATMOS           | 1                                                                                                                                                                                                                                                                 | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: ROSEMOUNT                       |  | ABNORMAL                                                                                                    | -.25"WG         | ATMOS           | 1                                                                                                                                                                                                                                                                 | 2         | TEST-SIM    | NA          |         |
|                                               |  | ACCIDENT                                                                                                    | 2.8             | 73              | 1                                                                                                                                                                                                                                                                 | 2         | TEST-SIM    | YES         |         |
| MODEL NO.: 1153DBSPA                          |  | RH (%):                                                                                                     |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             | NOTE 1  |
|                                               |  | NORMAL                                                                                                      | 50              | 95              | 1                                                                                                                                                                                                                                                                 | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -                        |  | ABNORMAL                                                                                                    | 50              | 95              | 1                                                                                                                                                                                                                                                                 | 2         | TEST-SIM    | NA          |         |
| REACTOR VESSEL LEVEL INDICA-                  |  | ACCIDENT                                                                                                    | 100             | 100             | 1                                                                                                                                                                                                                                                                 | 2         | TEST-SIM    | NA          |         |
| TION ON PANEL 2CES*PNL405                     |  | RADIATION:                                                                                                  |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             | NOTE 1  |
|                                               |  | NORM GAMMA                                                                                                  | 4E6             |                 | 1                                                                                                                                                                                                                                                                 |           |             | NA          | NOTE 5  |
| OP. CODE: A                                   |  | ACC GAMMA                                                                                                   | 1.5E6           | 2.2E7           | 5                                                                                                                                                                                                                                                                 | 2         | TEST-SIM    | YES         |         |
|                                               |  | NORM BETA                                                                                                   | NA              |                 | 1                                                                                                                                                                                                                                                                 |           |             | NA          |         |
|                                               |  | ACC BETA                                                                                                    | 6.1E6           |                 | 1                                                                                                                                                                                                                                                                 |           |             | YES         | NOTE 3  |
|                                               |  | NEUTRON                                                                                                     | NA              |                 | 1                                                                                                                                                                                                                                                                 |           |             | NA          |         |
| ACCURACY - - NOTE 4                           |  | SPRAY                                                                                                       | NA              | YES             | NA                                                                                                                                                                                                                                                                | 2         | TEST-SIM    | NA          |         |
| SPEC: 0.25% CALIB SPAN                        |  | SUBMERGENCE                                                                                                 | NA              | NA              | NA                                                                                                                                                                                                                                                                | NA        | NA          | NA          |         |
| DEMO: 4.67% CALIB SPAN                        |  |                                                                                                             |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             |         |
| [R1]                                          |  |                                                                                                             |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             |         |
| ZONE NO.: SC261145                            |  | DOCUMENT REFERENCE:                                                                                         |                 |                 | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                      |           |             |             |         |
| SUBMERGENCE: NA                               |  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R1]                 |                 |                 | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                            |           |             |             |         |
| SPRAY: NA                                     |  | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.131-5000E, IEEE 07.131-5000D IEEE 07.131-5000B |                 |                 | 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.                                                                                                                                                                                      |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY |  | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. RSS-C6                                                   |                 |                 | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SET POINT CALCULATION. |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                  |  | 4. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-28                                                     |                 |                 | 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.                                                                                                                                                                                   |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                |  | 5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P                                                 |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             |         |
|                                               |  | 6. EXTENDED POST ACCIDENT PERIOD CALCULATION NO 12177-EQS-05                                                |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             |         |
| MAINT/SURVEILL - - -                          |  |                                                                                                             |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             |         |
| REFERENCE: 2                                  |  |                                                                                                             |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             |         |
| QUALIFIED LIFE - - -                          |  |                                                                                                             |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             |         |
| (YEARS): 20                                   |  |                                                                                                             |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             |         |
| REFERENCE: 2,4                                |  |                                                                                                             |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             |         |
| [R1] INDICATES CHANGES MADE IN THIS REVISION  |  |                                                                                                             |                 |                 |                                                                                                                                                                                                                                                                   |           |             |             |         |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                        |                  | PARAMETER                                                                                                   | SPECIFIED VALUE | QUALIFIED VALUE                                                                                                 | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|----------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------|--------------------|-----------|-------------|-------------|---------|
|                                              |                  |                                                                                                             |                 |                                                                                                                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                   | 2RSS*LT116       | OP.TIME:                                                                                                    | 100 DAYS        | 100DAYS[R1]                                                                                                     | 3                  | 2,6       | TEST-SIM    | YES         |         |
| SPEC NO.:                                    | C071M            | TEMP (F):                                                                                                   |                 |                                                                                                                 |                    |           |             |             |         |
| SYSTEM:                                      | REMOTE SHUTDOWN  | NORMAL                                                                                                      | 104/85          | 120                                                                                                             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
|                                              |                  | ABNORMAL                                                                                                    | 87              | 120                                                                                                             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
| TYPE: (DESCRIPTION)                          |                  | ACCIDENT                                                                                                    | 200             | 318                                                                                                             | 1                  | 2         | TEST-SIM    | YES         |         |
| LEVEL TRANSMITTER                            |                  | PRESS(PSIG)                                                                                                 |                 |                                                                                                                 |                    |           |             |             | NOTE 1  |
|                                              |                  | NORMAL                                                                                                      | -.25"WG         | ATMOS                                                                                                           | 1                  | 2         | TEST-SIM    | NA          |         |
|                                              |                  | ABNORMAL                                                                                                    | -.25"WG         | ATMOS                                                                                                           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER:                                | ROSEMOUNT        | ACCIDENT                                                                                                    | 2.8             | 73                                                                                                              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                              |                  | IRH (%)                                                                                                     |                 |                                                                                                                 |                    |           |             |             | NOTE 1  |
| MODEL NO.:                                   | 1153DB4PA        | NORMAL                                                                                                      | 50              | 95                                                                                                              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                              |                  | ABNORMAL                                                                                                    | 50              | 95                                                                                                              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION:                             | - - -            | ACCIDENT                                                                                                    | 100             | 100                                                                                                             | 1                  | 2         | TEST-SIM    | NA          |         |
| REACTOR VESSEL LEVEL INDICA-                 |                  | RADIATION:                                                                                                  |                 |                                                                                                                 |                    |           |             |             | NOTE 1  |
| TION ON PANEL 2CES*PNL405                    |                  | NORM GAMMA                                                                                                  | 4E6             |                                                                                                                 | 1                  |           |             | NA          | NOTE 5  |
|                                              |                  | ACC GAMMA                                                                                                   | 9.9E5           | 2.2E7                                                                                                           | 5                  | 2         | TEST-SIM    | YES         |         |
| OP. CODE:                                    | A                | NORM BETA                                                                                                   | NA              |                                                                                                                 | 1                  |           |             | NA          |         |
|                                              |                  | ACC BETA                                                                                                    | 6.1E6           |                                                                                                                 | 1                  |           |             | YES         | NOTE 3  |
|                                              |                  | NEUTRON                                                                                                     | NA              |                                                                                                                 | 1                  |           |             | NA          |         |
|                                              |                  | SPRAY                                                                                                       | NA              | YES                                                                                                             | NA                 | 2         | TEST-SIM    | NA          |         |
| ACCURACY - -                                 | NOTE 4           | SUBMERGENCE                                                                                                 | NA              | NA                                                                                                              | NA                 | NA        |             | NA          |         |
| SPEC:                                        | 0.25% CALIB SPAN |                                                                                                             |                 |                                                                                                                 |                    |           |             |             |         |
| DEMO:                                        | 2.9% CALIB SPAN  |                                                                                                             |                 |                                                                                                                 |                    |           |             |             |         |
|                                              | [R1]             |                                                                                                             |                 |                                                                                                                 |                    |           |             |             |         |
| ZONE NO.:                                    | SC261145         | DOCUMENT REFERENCE:                                                                                         |                 | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                    |                    |           |             |             |         |
| SUBMERGENCE:                                 | NA               | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R1]                 |                 | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                          |                    |           |             |             |         |
| SPRAY:                                       | NA               | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.131-5000E, IEEE 07.131-5000D IEEE 07.131-5000B |                 | 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.                                    |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO                     |                  | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. RSS-C9                                                   |                 | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO                                    |                    |           |             |             |         |
| SUBMERGENCE OR SPRAY                         |                  | 4. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-28                                                     |                 | ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS: |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                 |                  | 5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P                                                 |                 | ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SET POINT CALCULATION.                                           |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I               |                  | 6. EXTENDED POST ACCIDENT PERIOD CALCULATION NO 12177-EQS-05                                                |                 | 5.THE NORMAL RADIATION VALUE IS BASED ON: THE QUALIFIED LIFE OF THE TRANSMITTER.                                |                    |           |             |             |         |
| MAINT/SURVEILL - - -                         |                  |                                                                                                             |                 |                                                                                                                 |                    |           |             |             |         |
| REFERENCE: 2                                 |                  |                                                                                                             |                 |                                                                                                                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                         |                  |                                                                                                             |                 |                                                                                                                 |                    |           |             |             |         |
| (YEARS): 20                                  |                  |                                                                                                             |                 |                                                                                                                 |                    |           |             |             |         |
| REFERENCE: 2,4                               |                  |                                                                                                             |                 |                                                                                                                 |                    |           |             |             |         |
| [R1] INDICATES CHANGES MADE IN THIS REVISION |                  |                                                                                                             |                 |                                                                                                                 |                    |           |             |             |         |



QUAL REF #\_C071MCB\_ REV 1

19-Feb-86

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | PARAMETER                                                                                                   | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                           |
|                                |                                                                                                             |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                   |
| EQUIP NO.: 2RSS*PT113          | OP.TIME:                                                                                                    | 100 DAYS           | 100DAYS[R1]        | 3                  | 2,6       | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                   |
| SPEC NO.: C071M                | TEMP (F):                                                                                                   |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                            |
| SYSTEM:                        | NORMAL                                                                                                      | 104/85             | 120                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                            |
| REMOTE SHUTDOWN                | ABNORMAL                                                                                                    | 87                 | 120                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                   |
| TYPE: (DESCRIPTION)            | ACCIDENT                                                                                                    | 200                | 318                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                   |
| PRESSURE TRANSMITTER           | PRESS (PSIG)                                                                                                |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                            |
|                                | NORMAL                                                                                                      | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                   |
|                                | ABNORMAL                                                                                                    | -.25"WG            | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                   |
| MANUFACTURER: ROSEMOUNT        | ACCIDENT                                                                                                    | 2.8                | 73                 | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                   |
|                                | RH (%):                                                                                                     |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                            |
| MODEL NO.: 1153GB9PA           | NORMAL                                                                                                      | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                   |
|                                | ABNORMAL                                                                                                    | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                   |
| SAFETY FUNCTION: - - -         | ACCIDENT                                                                                                    | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                   |
| REACTOR VESSEL PRESSURE        | RADIATION:                                                                                                  |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                            |
| INDICATION ON PANEL            | NORM GAMMA                                                                                                  | 4E6                |                    | 1                  |           |                | NA             | NOTE 5                                                                                                                                                                                                                                                            |
| 2CES*PNL405                    | ACC GAMMA                                                                                                   | 1.5E6              | 2.2E7              | 5                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                   |
| OP. CODE: A                    | NORM BETA                                                                                                   | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                                                   |
|                                | ACC BETA                                                                                                    | 6.1E6              |                    | 1                  |           |                | YES            | NOTE 3                                                                                                                                                                                                                                                            |
|                                | NEUTRON                                                                                                     | NA                 |                    | 1                  |           |                | NA             |                                                                                                                                                                                                                                                                   |
|                                | SPRAY                                                                                                       | NA                 | YES                | NA                 | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                   |
| ACCURACY - - NOTE 4            | SUBMERGENCE                                                                                                 | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                   |
| SPEC: 0.25% CALIB SPAN         |                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
| DEMO: 4.6% CALIB SPAN          |                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
| [R1]                           |                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
| ZONE NO.: SC261145             | DOCUMENT REFERENCE:                                                                                         |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                      |
| SUBMERGENCE: NA                | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985 [R1]                 |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                            |
| SPRAY: NA                      | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 07.131-5000E, IEEE 07.131-5000D IEEE 07.131-5000B |                    |                    |                    |           |                |                | 3.THE TRANSMITTER IS HERMETICALLY SEALED AND NOT AFFECTED BY BETA RADIATION.                                                                                                                                                                                      |
| EQUIPMENT NOT SUBJECT TO       | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. RSS-C7                                                   |                    |                    |                    |           |                |                | 4.SPEC ACCURACY OF 0.25% OF CALIBRATED SPAN IS FACTORY CALIBRATION. THE DEMO ACCURACY INCLUDES EFFECT OF ADDITIONAL ERRORS. SEE SWEC CALCULATION NO. 12177-EQS-14. DEMONSTRATED ACCURACY IS ACCEPTABLE IN ACCORDANCE WITH THE TRANSMITTERS SET POINT CALCULATION. |
| SUBMERGENCE OR SPRAY           | 4. EXTENDED QUALIFIED LIFE CALCULATION NO. 12177-EQS-28                                                     |                    |                    |                    |           |                |                | 5.THE NORMAL RADIATION VALUE IS BASED ON THE QUALIFIED LIFE OF THE TRANSMITTER.                                                                                                                                                                                   |
|                                | 5. CASE SPECIFIC RADIATION CALCULATION NO. 12177-PR(C)-22-P                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
| DOCUMENTATION ACCEPTABILITY:   | 6. EXTENDED POST ACCIDENT PERIOD CALCULATION NO 12177-EQS-05                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
| ACCEPTABLE TO NUREG 0588,CAT I |                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
|                                |                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
| MAINT/SURVEILL - - -           |                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
| REFERENCE: 2                   |                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
|                                |                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
| QUALIFIED LIFE - - -           |                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
| (YEARS): 20                    |                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
| REFERENCE: 2,4                 |                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
|                                |                                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |
|                                | [R1] INDICATES CHANGES MADE IN THIS REVISION                                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                   |



[illegible]





| EQUIPMENT DESCRIPTION          |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                       |
|--------------------------------|-------------|---------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                |             | PARAMETER                                                                                   | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                               |
|                                |             |                                                                                             |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                       |
| EQUIP NO.:                     | 2SVV*NBE220 | OP.TIME:                                                                                    | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 2                                                                                                                                                                |
| SPEC NO.:                      | C071W       | TEMP (F):                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                |
| SYSTEM:                        | MAIN STEAM  | NORMAL                                                                                      | 150                | 150                | 1                  | 2         | TEST-IDENT     | NA             |                                                                                                                                                                       |
| SAFETY RELIEF VALVES           |             | ABNORMAL                                                                                    | 190                | 190                | 1                  | 2,4       | TEST-IDENT     | NA             |                                                                                                                                                                       |
| TYPE: (DESCRIPTION)            |             | ACCIDENT                                                                                    | 340                | 405                | 1                  | 2         | TEST-IDENT     | YES            |                                                                                                                                                                       |
| ACCELEROMETER                  |             | PRESS(PSIG)                                                                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                |
|                                |             | NORMAL                                                                                      | .5 TO 1.0          | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |                                                                                                                                                                       |
|                                |             | ABNORMAL                                                                                    | 1.95               | 2                  | 1                  | 2,4       | AN+DATA        | NA             |                                                                                                                                                                       |
| MANUFACTURER: ENDEVCO          |             | ACCIDENT                                                                                    | 45                 | 63                 | 1                  | 2         | TEST-IDENT     | YES            |                                                                                                                                                                       |
|                                |             | RH (%):                                                                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                |
| MODEL NO.:                     | 2273AM-1    | NORMAL                                                                                      | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |                                                                                                                                                                       |
|                                |             | ABNORMAL                                                                                    | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |                                                                                                                                                                       |
| SAFETY FUNCTION: - - -         |             | ACCIDENT                                                                                    | STEAM              | STEAM              | 1                  | 2         | TEST-IDENT     | NA             |                                                                                                                                                                       |
| MONITORS RELIEF VALVE POSITION |             | RADIATION:                                                                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                |
|                                |             | NORM GAMMA                                                                                  |                    |                    |                    |           |                |                |                                                                                                                                                                       |
|                                |             | ACC GAMMA                                                                                   | 7.5E7              | 2.22E8             | 4                  | 2         | TEST-IDENT     | YES            | NOTE 3                                                                                                                                                                |
| OP. CODE: A                    |             | NORM BETA                                                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                       |
|                                |             | ACC BETA                                                                                    |                    |                    |                    |           |                |                |                                                                                                                                                                       |
|                                |             | NEUTRON                                                                                     |                    |                    |                    |           |                |                |                                                                                                                                                                       |
|                                |             | SPRAY                                                                                       | YES                | YES                | 1                  | 2         | TEST-IDENT     | NA             |                                                                                                                                                                       |
| ACCURACY - -                   |             | SUBMERGENCE                                                                                 | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                       |
| SPEC: NA                       |             |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
| DEMO: NA                       |             |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
| ZONE NO.:                      | PC289682    |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
| SUBMERGENCE:                   | NA          |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
| SPRAY:                         | YES         |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
|                                |             | DOCUMENT REFERENCE:                                                                         |                    |                    |                    |           |                |                |                                                                                                                                                                       |
|                                |             | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985.[R2] |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                          |
|                                |             | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E                      |                    |                    |                    |           |                |                | 2.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                         |
|                                |             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C3                                  |                    |                    |                    |           |                |                | 3.COMBINED RADIATION FOR GAMMA, BETA, & NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT, INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION 7.5E7 RAD.S. |
| DOCUMENTATION ACCEPTABILITY:   |             | 4. SWEC CALC NO. 12177-EQS-30                                                               |                    |                    |                    |           |                |                | 4.CABLE CONNECTOR SHOULD BE REPLACED EVERY 9 YEARS TO MAINTAIN QUALIFICATION. SEE REF. 4.                                                                             |
| ACCEPTABLE TO NUREG 0508,CAT I |             |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
|                                |             |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
|                                |             |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
| MAINT/SURVEILL - - -           |             |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
| REFERENCE: 2 (NOTE 4)          |             |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
|                                |             |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
| QUALIFIED LIFE - - -           |             |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
| (YEARS): 40                    |             |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
| REFERENCE: 2 (NOTE 4)          |             |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
|                                |             |                                                                                             |                    |                    |                    |           |                |                |                                                                                                                                                                       |
|                                |             | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                               |                    |                    |                    |           |                |                |                                                                                                                                                                       |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



| EQUIPMENT DESCRIPTION          |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
|--------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |             | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                     | 2SVV*NBE222 | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 2  |
| SPEC NO.:                      | C071W       | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                        | MAIN STEAM  | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 150                | 150                | 1                  | 2         | TEST-IDENT     | NA             |         |
| SAFETY RELIEF VALVES           |             | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 190                | 190                | 1                  | 2,4       | TEST-IDENT     | NA             |         |
| TYPE: (DESCRIPTION)            |             | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 340                | 405                | 1                  | 2         | TEST-IDENT     | YES            |         |
| ACCELEROMETER                  |             | PRESS (PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                |             | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | .5 TO 1.0          | ATMOS.             | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                |             | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1.95               | 2                  | 1                  | 2,4       | AN+DATA        | NA             |         |
| MANUFACTURER: ENDEVCO          |             | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 45                 | 63                 | 1                  | 2         | TEST-IDENT     | YES            |         |
| MODEL NO.:                     | 2273AM-1    | IRH (%):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                |             | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                |             | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION: - - -         |             | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | STEAM              | STEAM              | 1                  | 2         | TEST-IDENT     | NA             |         |
| MONITORS RELIEF VALVE          |             | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| POSITION                       |             | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
|                                |             | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 7.8E7              | 2.22E8             | 4                  | 2         | TEST-IDENT     | YES            | NOTE 3  |
| OP. CODE:                      | A           | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                    |                    |           |                |                |         |
|                                |             | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |         |
|                                |             | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                    |                    |           |                |                |         |
|                                |             | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | YES                | YES                | 1                  | 2         | TEST-IDENT     | NA             |         |
| ACCURACY - -                   |             | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: NA                       |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| DEMO: NA                       |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | PC289680    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| SPRAY:                         | YES         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)          |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| (YEARS): 40                    |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)          |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |         |
|                                |             | <p>DOCUMENT REFERENCE:</p> <p>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]</p> <p>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E</p> <p>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C3</p> <p>4. SWEC CALC NO. 12177-EQS-30</p> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.</p> <p>3.COMBINED RADIATION FOR GAMMA, BETA, &amp; NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT, INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION 7.8E7 RADS.</p> <p>4.CABLE CONNECTOR SHOULD BE REPLACED EVERY 9 YEARS TO MAINTAIN QUALIFICATION. SEE REF. 4.</p> |                    |                    |                    |           |                |                |         |
|                                |             | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |                    |           |                |                |         |



QUAL REF #\_C071WAD\_ REV 2

07-Mar-86

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |         |             |             |         |
|-----------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|---------|-------------|-------------|---------|
|                                               | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |         | QUAL METHOD | MARGIN DEMO | REMARKS |
| EQUIP NO.: 2SVV*NBE223                        | OP.TIME:                                   | 6 HRS           | >100 DAYS       | 3                  | 4       | AN+DATA     | YES         | NOTE 2  |
| SPEC NO.: C071W                               | TEMP (F):                                  | - - - -         | - - - -         | - - - -            | - - - - | - - - -     | - - - -     | NOTE 1  |
| SYSTEM: MAIN STEAM                            | NORMAL                                     | 150             | 150             | 1                  | 2       | TEST-IDENT  | NA          |         |
| SAFETY RELIEF VALVES                          | ABNORMAL                                   | 190             | 190             | 1                  | 2,4     | TEST-IDENT  | NA          |         |
| TYPE: (DESCRIPTION)                           | ACCIDENT                                   | 340             | 405             | 1                  | 2       | TEST-IDENT  | YES         |         |
| ACCELEROMETER                                 | PRESS (PSIG)                               | - - - -         | - - - -         | - - - -            | - - - - | - - - -     | - - - -     | NOTE 1  |
|                                               | NORMAL                                     | .5 TO 1.0       | ATMOS           | 1                  | 2       | TEST-IDENT  | NA          |         |
|                                               | ABNORMAL                                   | 1.95            | 2               | 1                  | 2,4     | AN+DATA     | NA          |         |
| MANUFACTURER: ENDEVCO                         | ACCIDENT                                   | 45              | 63              | 1                  | 2       | TEST-IDENT  | YES         |         |
| MODEL NO.: 2273AM-1                           | RH (%):                                    | - - - -         | - - - -         | - - - -            | - - - - | - - - -     | - - - -     | NOTE 1  |
|                                               | NORMAL                                     | 90              | 100             | 1                  | 2       | TEST-IDENT  | NA          |         |
|                                               | ABNORMAL                                   | 90              | 100             | 1                  | 2       | TEST-IDENT  | NA          |         |
| SAFETY FUNCTION: - - -                        | ACCIDENT                                   | STEAM           | STEAM           | 1                  | 2       | TEST-IDENT  | NA          |         |
| MONITORS RELIEF VALVE POSITION                | RADIATION:                                 | - - - -         | - - - -         | - - - -            | - - - - | - - - -     | - - - -     | NOTE 1  |
|                                               | NORM GAMMA                                 |                 |                 |                    |         |             |             |         |
|                                               | ACC GAMMA                                  | 7.8E7           | 2.22E8          | 4                  | 2       | TEST-IDENT  | YES         | NOTE 3  |
|                                               | NORM BETA                                  |                 |                 |                    |         |             |             |         |
|                                               | ACC BETA                                   |                 |                 |                    |         |             |             |         |
|                                               | NEUTRON                                    |                 |                 |                    |         |             |             |         |
| OP. CODE: A                                   | SPRAY                                      | YES             | YES             | 1                  | 2       | TEST-IDENT  | NA          |         |
|                                               | SUBMERGENCE                                | NA              | NA              | NA                 | NA      | NA          | NA          |         |
| ACCURACY - -                                  |                                            |                 |                 |                    |         |             |             |         |
| SPEC: NA                                      |                                            |                 |                 |                    |         |             |             |         |
| DEMO: NA                                      |                                            |                 |                 |                    |         |             |             |         |
| ZONE NO.: PC289680                            |                                            |                 |                 |                    |         |             |             |         |
| SUBMERGENCE: NA                               |                                            |                 |                 |                    |         |             |             |         |
| SPRAY: YES                                    |                                            |                 |                 |                    |         |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                  |                                            |                 |                 |                    |         |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                |                                            |                 |                 |                    |         |             |             |         |
| MAINT/SURVEILL - - -                          |                                            |                 |                 |                    |         |             |             |         |
| REFERENCE: 2 (NOTE 4)                         |                                            |                 |                 |                    |         |             |             |         |
| QUALIFIED LIFE - - -                          |                                            |                 |                 |                    |         |             |             |         |
| (YEARS): 40                                   |                                            |                 |                 |                    |         |             |             |         |
| REFERENCE: 2 (NOTE 4)                         |                                            |                 |                 |                    |         |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                                            |                 |                 |                    |         |             |             |         |

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.  
3.COMBINED RADIATION FOR GAMMA, BETA, & NEUTRON FOR 40 YEARS OF QUALIFIED LIFE! PLUS ACCIDENT, INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION 7.8E7 RADS.  
4.CABLE CONNECTOR SHOULD BE REPLACED EVERY 9 YEARS TO MAINTAIN QUALIFICATION. SEE REF. 4.





QUAL REF # C071WAE REV 2

09-Feb-86

[illegible]



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



| EQUIPMENT DESCRIPTION                |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    |                    |           |                |                |         |
|--------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                      |             | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                           | 2SVV*NBE226 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
| SPEC NO.:                            | C071W       | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 100 DAYS           | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 2  |
| SYSTEM:                              | MAIN STEAM  | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SAFETY RELIEF VALVES                 |             | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 150                | 150                | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                      |             | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 190                | 190                | 1                  | 2,4       | TEST-IDENT     | NA             |         |
|                                      |             | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 340                | 405                | 1                  | 2         | TEST-IDENT     | YES            |         |
| TYPE: (DESCRIPTION)<br>ACCELEROMETER |             | PRESS (PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                      |             | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | .5 TO 1.0          | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                      |             | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1.95               | 2                  | 1                  | 2,4       | AN+DATA        | NA             |         |
| MANUFACTURER:                        | ENDEVCO     | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 45                 | 63                 | 1                  | 2         | TEST-IDENT     | YES            |         |
| MODEL NO.:                           | 2273AM-1    | RH (%):                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                      |             | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                      |             | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION:                     | - - -       | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | STEAM              | STEAM              | 1                  | 2         | TEST-IDENT     | NA             |         |
| MONITORS RELIEF VALVE<br>POSITION    |             | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| OP. CODE:                            | A           | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    |                    |           |                |                |         |
|                                      |             | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 7.8E7              | 2.22E8             | 4                  | 2         | TEST-IDENT     | YES            | NOTE 3  |
|                                      |             | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |                    |           |                |                |         |
| ACCURACY - -                         |             | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                    |                    |           |                |                |         |
|                                      |             | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                    |                    |           |                |                |         |
|                                      |             | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | YES                | YES                | 1                  | 2         | TEST-IDENT     | NA             |         |
| DEMO:                                | NA          | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                               | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                            | PC289680    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                         | NA          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
| SPRAY:                               | YES         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:         |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I       |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                 |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
| REFERENCE:                           | 2 (NOTE 4)  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                 |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
| (YEARS):                             | 40          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
| REFERENCE:                           | 2 (NOTE 4)  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |         |
|                                      |             | <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.</p> <p>3.COMBINED RADIATION FOR GAMMA, BETA, &amp; NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT, INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION 7.8E7 RADS.</p> <p>4.CABLE CONNECTOR SHOULD BE REPLACED EVERY 9 YEARS TO MAINTAIN QUALIFICATION. SEE REF. 4.</p> |                    |                    |                    |           |                |                |         |
|                                      |             | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                    |                    |           |                |                |         |



QUAL REF # C071WAH REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION          |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |                                                                                                                                                                      |                |                |         |
|--------------------------------|-------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------|
|                                |             | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                                                                                                      | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |             |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED                                                                                                                                                            |                |                |         |
| =====                          |             |                                                                                              |                    |                    |                    |                                                                                                                                                                      |                |                |         |
| EQUIP NO.:                     | 2SVV*NBE227 | OP.TIME:                                                                                     | 100 DAYS           | >100 DAYS          | 3                  | 4                                                                                                                                                                    | AN+DATA        | YES            | NOTE 2  |
| SPEC NO.:                      | C071W       | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                              | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                        | MAIN STEAM  | NORMAL                                                                                       | 150                | 150                | 1                  | 2                                                                                                                                                                    | TEST-IDENT     | NA             |         |
| SAFETY RELIEF VALVES           |             | ABNORMAL                                                                                     | 190                | 190                | 1                  | 2,4                                                                                                                                                                  | TEST-IDENT     | NA             |         |
| I TYPE: (DESCRIPTION)          |             | ACCIDENT                                                                                     | 340                | 405                | 1                  | 2                                                                                                                                                                    | TEST-IDENT     | YES            |         |
| ACCELEROMETER                  |             | PRESS (PSIG)                                                                                 | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                              | - - - -        | - - - -        | NOTE 1  |
|                                |             | NORMAL                                                                                       | .5 TO 1.0          | ATMOS              | 1                  | 2                                                                                                                                                                    | TEST-IDENT     | NA             |         |
|                                |             | ABNORMAL                                                                                     | 1.95               | 2                  | 1                  | 2,4                                                                                                                                                                  | AN+DATA        | NA             |         |
| MANUFACTURER: ENDEVCO          |             | ACCIDENT                                                                                     | 45                 | 63                 | 1                  | 2                                                                                                                                                                    | TEST-IDENT     | YES            |         |
|                                |             | RH (%):                                                                                      | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                              | - - - -        | - - - -        | NOTE 1. |
| MODEL NO.:                     | 2273AM-1    | NORMAL                                                                                       | 90                 | 100                | 1                  | 2                                                                                                                                                                    | TEST-IDENT     | NA             |         |
|                                |             | ABNORMAL                                                                                     | 90                 | 100                | 1                  | 2                                                                                                                                                                    | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION: - - -         |             | ACCIDENT                                                                                     | STEAM              | STEAM              | 1                  | 2                                                                                                                                                                    | TEST-IDENT     | NA             |         |
| MONITORS RELIEF VALVE POSITION |             | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                              | - - - -        | - - - -        | NOTE 1  |
|                                |             | NORM GAMMA                                                                                   |                    |                    |                    |                                                                                                                                                                      |                |                |         |
|                                |             | ACC GAMMA                                                                                    | 7.8E7              | 2.22E8             | 4                  | 2                                                                                                                                                                    | TEST-IDENT     | YES            | NOTE 3  |
| OP. CODE: A                    |             | NORM BETA                                                                                    |                    |                    |                    |                                                                                                                                                                      |                |                |         |
|                                |             | ACC BETA                                                                                     |                    |                    |                    |                                                                                                                                                                      |                |                |         |
|                                |             | NEUTRON                                                                                      |                    |                    |                    |                                                                                                                                                                      |                |                |         |
|                                |             | SPRAY                                                                                        | YES                | YES                | 1                  | 2                                                                                                                                                                    | TEST-IDENT     | NA             |         |
| ACCURACY - -                   |             | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA                                                                                                                                                                   | NA             | NA             |         |
| =====                          |             | =====                                                                                        |                    |                    |                    |                                                                                                                                                                      |                |                |         |
| SPEC: NA                       |             |                                                                                              |                    |                    |                    |                                                                                                                                                                      |                |                |         |
| DEMO: NA                       |             |                                                                                              |                    |                    |                    |                                                                                                                                                                      |                |                |         |
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| ZONE NO.:                      | PC289680    | DOCUMENT REFERENCE:                                                                          |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                         |                |                |         |
| SUBMERGENCE:                   | NA          | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    | 2.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                        |                |                |         |
| SPRAY:                         | YES         | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E                       |                    |                    |                    | 3.COMBINED RADIATION FOR GAMMA, BETA, & NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT, INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION 7.8E7 RADS. |                |                |         |
|                                |             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C1                                   |                    |                    |                    | 4.CABLE CONNECTOR SHOULD BE REPLACED EVERY 9 YEARS TO MAINTAIN QUALIFICATION. SEE REF. 4.                                                                            |                |                |         |
|                                |             | 4. SWEC CALC NO. 12177-EQS-30                                                                |                    |                    |                    |                                                                                                                                                                      |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |             |                                                                                              |                    |                    |                    |                                                                                                                                                                      |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |             |                                                                                              |                    |                    |                    |                                                                                                                                                                      |                |                |         |
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QUAL REF # C071WAI REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|----------------------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2SVV*NBE228                                         | OP.TIME:                                   | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 2  |
| SPEC NO.: C071W                                                | TEMP (F):                                  | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
| SYSTEM: MAIN STEAM                                             | NORMAL                                     | 150                | 150                | 1                  | 2         | TEST-IDENT     | NA             |         |
| SAFETY RELIEF VALVES                                           | ABNORMAL                                   | 190                | 190                | 1                  | 2,4       | TEST-IDENT     | NA             |         |
| TYPE: (DESCRIPTION)                                            | ACCIDENT                                   | 340                | 405                | 1                  | 2         | TEST-IDENT     | YES            |         |
| ACCELEROMETER                                                  | PRESS(PSIG)                                | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                                                                | NORMAL                                     | .5 TO 1.0          | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                                                | ABNORMAL                                   | 1.95               | 2                  | 1                  | 2,4       | AN+DATA        | NA             |         |
| MANUFACTURER: ENDEVCO                                          | ACCIDENT                                   | 45                 | 63                 | 1                  | 2         | TEST-IDENT     | YES            |         |
|                                                                | RH (%):                                    | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
| MODEL NO.: 2273AM-1                                            | NORMAL                                     | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                                                | ABNORMAL                                   | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION: - - -                                         | ACCIDENT                                   | STEAM              | STEAM              | 1                  | 2         | TEST-IDENT     | NA             |         |
| MONITORS RELIEF VALVE POSITION                                 | RADIATION:                                 | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                                                                | NORM GAMMA                                 |                    |                    |                    |           |                |                |         |
|                                                                | ACC GAMMA                                  | 7.8E7              | 2.22E8             | 4                  | 2         | TEST-IDENT     | YES            | NOTE 3  |
| OP. CODE: A                                                    | NORM BETA                                  |                    |                    |                    |           |                |                |         |
|                                                                | ACC BETA                                   |                    |                    |                    |           |                |                |         |
|                                                                | NEUTRON                                    |                    |                    |                    |           |                |                |         |
|                                                                | SPRAY                                      | YES                | YES                | 1                  | 2         | TEST-IDENT     | NA             |         |
| ACCURACY - -                                                   | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: NA                                                       |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                                                       |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: PC289680                                             |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                                                |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: YES                                                     |                                            |                    |                    |                    |           |                |                |         |
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| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                            |                    |                    |                    |           |                |                |         |
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|                                                                |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2 (NOTE 4)                  |                                            |                    |                    |                    |           |                |                |         |
|                                                                |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2 (NOTE 4)   |                                            |                    |                    |                    |           |                |                |         |
|                                                                |                                            |                    |                    |                    |           |                |                |         |
|                                                                |                                            |                    |                    |                    |           |                |                |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2.OPERABILITY PERIOD EXTENDED FROM 33  
DAYS TESTED VALUE, TO 100 DAYS PLUS  
MARGIN BY ANALYSIS.  
3.COMBINED RADIATION FOR GAMMA, BETA, &  
NEUTRON FOR 40 YEARS OF QUALIFIED LIFE  
PLUS ACCIDENT, INCLUDING APPLICABLE  
BETA REDUCTION AND NEUTRON CONVERSION  
7.8E7 RAD.S.  
4.CABLE CONNECTOR SHOULD BE REPLACED  
EVERY 9 YEARS TO MAINTAIN  
QUALIFICATION. SEE REF. 4.



ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                         |             | PARAMETER                                                                                    | SPECIFIED VALUE                                                                                                                                                      | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|-----------------------------------------------|-------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|-----------|-------------|-------------|---------|
| =====                                         |             | =====                                                                                        | =====                                                                                                                                                                | =====           | SPECIFIED          | QUALIFIED | =====       | =====       | =====   |
| EQUIP NO.:                                    | 2SVV*NBE229 | OP.TIME:                                                                                     | 100 DAYS                                                                                                                                                             | >100 DAYS       | 3                  | 4         | AN+DATA     | YES         | NOTE 2  |
| SPEC NO.:                                     | C071W       | TEMP (F):                                                                                    | - - - -                                                                                                                                                              | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| SYSTEM:                                       | MAIN STEAM  | NORMAL                                                                                       | 150                                                                                                                                                                  | 150             | 1                  | 2         | TEST-IDENT  | NA          |         |
| SAFETY RELIEF VALVES                          |             | ABNORMAL                                                                                     | 190                                                                                                                                                                  | 190             | 1                  | 2,4       | TEST-IDENT  | NA          |         |
| TYPE: (DESCRIPTION)                           |             | ACCIDENT                                                                                     | 340                                                                                                                                                                  | 405             | 1                  | 2         | TEST-IDENT  | YES         |         |
| ACCELEROMETER                                 |             | PRESS (PSIG)                                                                                 | - - - -                                                                                                                                                              | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                               |             | NORMAL                                                                                       | .5 TO 1.0                                                                                                                                                            | ATMOS           | 1                  | 2         | TEST-IDENT  | NA          |         |
|                                               |             | ABNORMAL                                                                                     | 1.95                                                                                                                                                                 | 2               | 1                  | 2,4       | AN+DATA     | NA          |         |
| MANUFACTURER: ENDEVCO                         |             | ACCIDENT                                                                                     | 45                                                                                                                                                                   | 63              | 1                  | 2         | TEST-IDENT  | YES         |         |
|                                               |             | RH (%):                                                                                      | - - - -                                                                                                                                                              | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| MODEL NO.:                                    | 2273AM-1    | NORMAL                                                                                       | 90                                                                                                                                                                   | 100             | 1                  | 2         | TEST-IDENT  | NA          |         |
|                                               |             | ABNORMAL                                                                                     | 90                                                                                                                                                                   | 100             | 1                  | 2         | TEST-IDENT  | NA          |         |
| SAFETY FUNCTION: - - -                        |             | ACCIDENT                                                                                     | STEAM                                                                                                                                                                | STEAM           | 1                  | 2         | TEST-IDENT  | NA          |         |
| MONITORS RELIEF VALVE                         |             | RADIATION:                                                                                   | - - - -                                                                                                                                                              | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| POSITION                                      |             | NORM GAMMA                                                                                   |                                                                                                                                                                      |                 |                    |           |             |             |         |
|                                               |             | ACC GAMMA                                                                                    | 7.8E7                                                                                                                                                                | 2.22E8          | 4                  | 2         | TEST-IDENT  | YES         | NOTE 3  |
|                                               |             | NORM BETA                                                                                    |                                                                                                                                                                      |                 |                    |           |             |             |         |
|                                               |             | ACC BETA                                                                                     |                                                                                                                                                                      |                 |                    |           |             |             |         |
|                                               |             | NEUTRON                                                                                      |                                                                                                                                                                      |                 |                    |           |             |             |         |
| OP. CODE: A                                   |             | SPRAY                                                                                        | YES                                                                                                                                                                  | YES             | 1                  | 2         | TEST-IDENT  | NA          |         |
|                                               |             | SUBMERGENCE                                                                                  | NA                                                                                                                                                                   | NA              | NA                 | NA        | NA          | NA          |         |
| =====                                         |             |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |
| ACCURACY - -                                  |             |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |
| SPEC:                                         | NA          |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |
| DEMO:                                         | NA          |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |
| ZONE NO.:                                     | PC289680    |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |
| SUBMERGENCE:                                  | NA          |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |
| SPRAY:                                        | YES         |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                  |             | DOCUMENT REFERENCE:                                                                          | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                         |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                |             | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] | 2.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                        |                 |                    |           |             |             |         |
|                                               |             | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E                       | 3.COMBINED RADIATION FOR GAMMA, BETA, & NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT, INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION 7.8E7 RADS. |                 |                    |           |             |             |         |
|                                               |             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C1                                   | 4.CABLE CONNECTOR SHOULD BE REPLACED EVERY 9 YEARS TO MAINTAIN QUALIFICATION. SEE REF. 4.                                                                            |                 |                    |           |             |             |         |
|                                               |             | 4. SWEC CALC NO. 12177-EQS-30                                                                |                                                                                                                                                                      |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                          |             |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |
| REFERENCE: 2 (NOTE 4)                         |             |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                          |             |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |
| (YEARS): 40                                   |             |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |
| REFERENCE: 2 (NOTE 4)                         |             |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |             |                                                                                              |                                                                                                                                                                      |                 |                    |           |             |             |         |



09-Feb-86

[illegible]



ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                   |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------|
|                                                                | PARAMETER                                                                                                                                                                                                                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                |                                                                                                                                                                                                                                                                                              |                    |                    | SPECIFIED          | QUALIFIED                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |         |
| EQUIP NO.: 2SVV*NBE231                                         |                                                                                                                                                                                                                                                                                              |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
| SPEC NO.: C071W                                                | OP.TIME:                                                                                                                                                                                                                                                                                     | 6 HRS              | >100 DAYS          | 3                  | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                   | AN+DATA        | YES            | NOTE 2  |
| SYSTEM: MAIN STEAM                                             | TEMP (F):                                                                                                                                                                                                                                                                                    | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                                                                                                                                                                                                                             | - - - -        | - - - -        | NOTE 1  |
| SAFETY RELIEF VALVES                                           | NORMAL                                                                                                                                                                                                                                                                                       | 150                | 150                | 1                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                   | TEST-IDENT     | NA             |         |
|                                                                | ABNORMAL                                                                                                                                                                                                                                                                                     | 190                | 190                | 1                  | 2, 4                                                                                                                                                                                                                                                                                                                                                                                                                                                | TEST-IDENT     | NA             |         |
| TYPE: (DESCRIPTION)                                            | ACCIDENT                                                                                                                                                                                                                                                                                     | 340                | 405                | 1                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                   | TEST-IDENT     | YES            |         |
| ACCELEROMETER                                                  | PRESS(PSIG)                                                                                                                                                                                                                                                                                  | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                                                                                                                                                                                                                             | - - - -        | - - - -        | NOTE 1  |
|                                                                | NORMAL                                                                                                                                                                                                                                                                                       | .5 TO 1.0          | ATMOS              | 1                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                   | TEST-IDENT     | NA             |         |
|                                                                | ABNORMAL                                                                                                                                                                                                                                                                                     | 1.95               | 2                  | 1                  | 2, 4                                                                                                                                                                                                                                                                                                                                                                                                                                                | AN+DATA        | NA             |         |
| MANUFACTURER: ENDEVCO                                          | ACCIDENT                                                                                                                                                                                                                                                                                     | 45                 | 63                 | 1                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                   | TEST-IDENT     | YES            |         |
|                                                                | RH (%) :                                                                                                                                                                                                                                                                                     | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                                                                                                                                                                                                                             | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.: 2273AM-1                                            | NORMAL                                                                                                                                                                                                                                                                                       | 90                 | 100                | 1                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                   | TEST-IDENT     | NA             |         |
|                                                                | ABNORMAL                                                                                                                                                                                                                                                                                     | 90                 | 100                | 1                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                   | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION: - - -                                         | ACCIDENT                                                                                                                                                                                                                                                                                     | STEAM              | STEAM              | 1                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                   | TEST-IDENT     | NA             |         |
| MONITORS RELIEF VALVE POSITION                                 | RADIATION:                                                                                                                                                                                                                                                                                   | - - - -            | - - - -            | - - - -            | - - - -                                                                                                                                                                                                                                                                                                                                                                                                                                             | - - - -        | - - - -        | NOTE 1  |
|                                                                | NORM GAMMA                                                                                                                                                                                                                                                                                   |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
|                                                                | ACC GAMMA                                                                                                                                                                                                                                                                                    | 7.8E7              | 2.22E8             | 4                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                   | TEST-IDENT     | YES            | NOTE 3  |
| OP. CODE: A                                                    | NORM BETA                                                                                                                                                                                                                                                                                    |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
|                                                                | ACC BETA                                                                                                                                                                                                                                                                                     |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
|                                                                | NEUTRON                                                                                                                                                                                                                                                                                      |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
|                                                                | SPRAY                                                                                                                                                                                                                                                                                        | YES                | YES                | 1                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                   | TEST-IDENT     | NA             |         |
| ACCURACY - -                                                   | SUBMERGENCE                                                                                                                                                                                                                                                                                  | NA                 | NA                 | NA                 | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA             | NA             |         |
| SPEC: NA                                                       |                                                                                                                                                                                                                                                                                              |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
| DEMO: NA                                                       |                                                                                                                                                                                                                                                                                              |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
| ZONE NO.: PC289680                                             |                                                                                                                                                                                                                                                                                              |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
| SUBMERGENCE: NA                                                |                                                                                                                                                                                                                                                                                              |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
| SPRAY: YES                                                     |                                                                                                                                                                                                                                                                                              |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I | DOCUMENT REFERENCE:<br>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]<br>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-S11-5002E<br>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C3<br>4. SWEC CALC NO. 12177-EQS-30 |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.<br>2.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.<br>3.COMBINED RADIATION FOR GAMMA, BETA, & NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT, INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION 7.8E7 RAD.S.<br>4.CABLE CONNECTOR SHOULD BE REPLACED EVERY 9 YEARS TO MAINTAIN QUALIFICATION. SEE REF. 4. |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2 (NOTE 4)                  |                                                                                                                                                                                                                                                                                              |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2 (NOTE 4)   |                                                                                                                                                                                                                                                                                              |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.                  |                                                                                                                                                                                                                                                                                              |                    |                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |         |





QUAL REF #\_C071WAM\_\_\_\_ REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION           |  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                            |                 |                 |                    |           |             |             |         |
|---------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                 |  | PARAMETER                                                                                                                                                             | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                 |  |                                                                                                                                                                       |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2SVV*NBE232          |  | OP. TIME:                                                                                                                                                             | 6 HRS           | >100 DAYS       | 3                  | 4         | AN+DATA     | YES         | NOTE 2  |
| SPEC NO.: C071W                 |  | TEMP (F):                                                                                                                                                             |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM: MAIN STEAM              |  | NORMAL                                                                                                                                                                | 150             | 150             | 1                  | 2         | TEST-IDENT  | NA          |         |
| SAFETY RELIEF VALVES            |  | ABNORMAL                                                                                                                                                              | 190             | 190             | 1                  | 2,4       | TEST-IDENT  | NA          |         |
| TYPE: (DESCRIPTION)             |  | ACCIDENT                                                                                                                                                              | 340             | 405             | 1                  | 2         | TEST-IDENT  | YES         |         |
| ACCELEROMETER                   |  | PRESS (PSIG)                                                                                                                                                          |                 |                 |                    |           |             |             | NOTE 1  |
|                                 |  | NORMAL                                                                                                                                                                | .5 TO 1.0       | ATMOS           | 1                  | 2         | TEST-IDENT  | NA          |         |
| MANUFACTURER: ENDEVCO           |  | ABNORMAL                                                                                                                                                              | 1.95            | 2               | 1                  | 2,4       | AN+DATA     | NA          |         |
|                                 |  | ACCIDENT                                                                                                                                                              | 45              | 63              | 1                  | 2         | TEST-IDENT  | YES         |         |
| MODEL NO.: 2273AM-1             |  | RH (%)                                                                                                                                                                |                 |                 |                    |           |             |             | NOTE 1  |
|                                 |  | NORMAL                                                                                                                                                                | 90              | 100             | 1                  | 2         | TEST-IDENT  | NA          |         |
| SAFETY FUNCTION: - - -          |  | ABNORMAL                                                                                                                                                              | 90              | 100             | 1                  | 2         | TEST-IDENT  | NA          |         |
| MONITORS RELIEF VALVE           |  | ACCIDENT                                                                                                                                                              | STEAM           | STEAM           | 1                  | 2         | TEST-IDENT  | NA          |         |
| POSITION                        |  | RADIATION:                                                                                                                                                            |                 |                 |                    |           |             |             | NOTE 1  |
|                                 |  | NORM GAMMA                                                                                                                                                            |                 |                 |                    |           |             |             |         |
| OP. CODE: A                     |  | ACC GAMMA                                                                                                                                                             | 7.8E7           | 2.22E8          | 4                  | 2         | TEST-IDENT  | YES         | NOTE 3  |
|                                 |  | NORM BETA                                                                                                                                                             |                 |                 |                    |           |             |             |         |
|                                 |  | ACC BETA                                                                                                                                                              |                 |                 |                    |           |             |             |         |
|                                 |  | NEUTRON                                                                                                                                                               |                 |                 |                    |           |             |             |         |
| ACCURACY - -                    |  | SPRAY                                                                                                                                                                 | YES             | YES             | 1                  | 2         | TEST-IDENT  | NA          |         |
| SPEC: NA                        |  | SUBMERGENCE                                                                                                                                                           | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| DEMO: NA                        |  |                                                                                                                                                                       |                 |                 |                    |           |             |             |         |
| ZONE NO.: PC289680              |  | DOCUMENT REFERENCE:                                                                                                                                                   |                 |                 |                    |           |             |             |         |
| SUBMERGENCE: NA                 |  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]                                                                          |                 |                 |                    |           |             |             |         |
| SPRAY: YES                      |  | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E                                                                                                |                 |                 |                    |           |             |             |         |
|                                 |  | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C3                                                                                                            |                 |                 |                    |           |             |             |         |
|                                 |  | 4. SWEC CALC NO. 12177-EQS-30                                                                                                                                         |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:    |  | NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                         |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588, CAT I |  | 2. OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.                                                                        |                 |                 |                    |           |             |             |         |
|                                 |  | 3. COMBINED RADIATION FOR GAMMA, BETA, & NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT, INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION 7.8E7 RADS. |                 |                 |                    |           |             |             |         |
|                                 |  | 4. CABLE CONNECTOR SHOULD BE REPLACED EVERY 9 YEARS TO MAINTAIN QUALIFICATION. SEE REF. 4.                                                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -            |  |                                                                                                                                                                       |                 |                 |                    |           |             |             |         |
| REFERENCE: 2 (NOTE 4)           |  |                                                                                                                                                                       |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -            |  |                                                                                                                                                                       |                 |                 |                    |           |             |             |         |
| (YEARS): 40                     |  |                                                                                                                                                                       |                 |                 |                    |           |             |             |         |
| REFERENCE: 2 (NOTE 4)           |  |                                                                                                                                                                       |                 |                 |                    |           |             |             |         |
|                                 |  | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                         |                 |                 |                    |           |             |             |         |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



09-Feb-86

| EQUIPMENT DESCRIPTION                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|----------------------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2SVV*NBE234                                         |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.: C071W                                                | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 2  |
| SYSTEM: MAIN STEAM                                             | TEMP (F):                                  | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
| SAFETY RELIEF VALVES                                           | NORMAL                                     | 150                | 150                | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                                                | ABNORMAL                                   | 190                | 190                | 1                  | 2,4       | TEST-IDENT     | NA             |         |
| TYPE: (DESCRIPTION)                                            | ACCIDENT                                   | 340                | 405                | 1                  | 2         | TEST-IDENT     | YES            |         |
| ACCELEROMETER                                                  | PRESS(PSIG)                                | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                                                                | NORMAL                                     | 0.5 TO 1           | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                                                | ABNORMAL                                   | 1.95               | 2                  | 1                  | 2,4       | AN+DATA        | NA             |         |
| MANUFACTURER: ENDEVCO                                          | ACCIDENT                                   | 45                 | 63                 | 1                  | 2         | TEST-IDENT     | YES            |         |
|                                                                | RH (%)                                     | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1. |
| MODEL NO.: 2273AM-1                                            | NORMAL                                     | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                                                | ABNORMAL                                   | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION: - - -                                         | ACCIDENT                                   | STEAM              | STEAM              | 1                  | 2         | TEST-IDENT     | NA             |         |
| MONITORS RELIEF VALVE POSITION                                 | RADIATION:                                 | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                                                                | NORM GAMMA                                 |                    |                    |                    |           |                |                |         |
|                                                                | ACC GAMMA                                  | 7.8E7              | 2.22E8             | 4                  | 2         | TEST-IDENT     | YES            | NOTE 3  |
| OP. CODE: A                                                    | NORM BETA                                  |                    |                    |                    |           |                |                |         |
|                                                                | ACC BETA                                   |                    |                    |                    |           |                |                |         |
|                                                                | NEUTRON                                    |                    |                    |                    |           |                |                |         |
|                                                                | SPRAY                                      | YES                | YES                | 1                  | 2         | TEST-IDENT     | NA             |         |
| ACCURACY - -                                                   | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: NA                                                       |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                                                       |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: PC289686                                             |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                                                |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: YES                                                     |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                            |                    |                    |                    |           |                |                |         |
|                                                                |                                            |                    |                    |                    |           |                |                |         |
|                                                                |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2 (NOTE 4)                  |                                            |                    |                    |                    |           |                |                |         |
|                                                                |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2 (NOTE 4)   |                                            |                    |                    |                    |           |                |                |         |
|                                                                |                                            |                    |                    |                    |           |                |                |         |
|                                                                |                                            |                    |                    |                    |           |                |                |         |
|                                                                |                                            |                    |                    |                    |           |                |                |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.



QUAL REF #\_C071WAP\_ REV 2

07-Mar-86

| EQUIPMENT DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2SVV*NBE235                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | OP.TIME:                                   | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 2  |
| SPEC NO.: C071W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: MAIN STEAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NORMAL                                     | 150                | 150                | 1                  | 2         | TEST-IDENT     | NA             |         |
| SAFETY RELIEF VALVES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ABNORMAL                                   | 190                | 190                | 1                  | 2,4       | TEST-IDENT     | NA             |         |
| TYPE: (DESCRIPTION)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ACCIDENT                                   | 340                | 405                | 1                  | 2         | TEST-IDENT     | YES            |         |
| ACCELEROMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NORMAL                                     | 0.5TO1             | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ABNORMAL                                   | 1.95               | 2                  | 1                  | 2,4       | AN+DATA        | NA             |         |
| MANUFACTURER: ENDEVCO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ACCIDENT                                   | 45                 | 63                 | 1                  | 2         | TEST-IDENT     | YES            |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RH (%)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.: 2273AM-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NORMAL                                     | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ABNORMAL                                   | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION: - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ACCIDENT                                   | STEAM              | STEAM              | 1                  | 2         | TEST-IDENT     | NA             |         |
| MONITORS RELIEF VALVE<br>POSITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NORM GAMMA                                 |                    |                    |                    |           |                |                |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ACC GAMMA                                  | 1.5E8              | 2.22E8             | 4                  | 2         | TEST-IDENT     | YES            | NOTE 3  |
| OP. CODE: A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | NORM BETA                                  |                    |                    |                    |           |                |                |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ACC BETA                                   |                    |                    |                    |           |                |                |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NEUTRON                                    |                    |                    |                    |           |                |                |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SPRAY                                      | YES                | YES                | 1                  | 2         | TEST-IDENT     | NA             |         |
| ACCURACY - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: PC289679                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: YES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                            |                    |                    |                    |           |                |                |         |
| <p>DOCUMENT REFERENCE:</p> <ol style="list-style-type: none"> <li>EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]</li> <li>VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E</li> <li>EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C3</li> <li>SWEC CALC NO. 12177-EQS-30</li> </ol> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.<br/>2.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.<br/>3.COMBINED RADIATION FOR GAMMA, BETA, &amp; NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT, INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION 1.5E8 RADS.<br/>4.CABLE CONNECTOR SHOULD BE REPLACED EVERY 9 YEARS TO MAINTAIN QUALIFICATION. SEE REF. 4.</p> |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            |                    |                    |                    |           |                |                |         |





QUAL REF #\_C071WAQ\_\_\_\_ REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION          |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                 |                    |           |             |             |         |
|--------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |             | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                     | 2SVV*NBE236 | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 6 HRS           | >100 DAYS       | 3                  | 4         | AN+DATA     | YES         | NOTE 2  |
| SPEC NO.:                      | C071W       | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                        | MAIN STEAM  | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 150             | 150             | 1                  | 2         | TEST-IDENT  | NA          |         |
| SAFETY RELIEF VALVES           |             | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 190             | 190             | 1                  | 2,4       | TEST-IDENT  | NA          |         |
| ITYPE: (DESCRIPTION)           |             | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 340             | 405             | 1                  | 2         | TEST-IDENT  | YES         |         |
| ACCELEROMETER                  |             | PRESS (PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                 |                    |           |             |             | NOTE 1  |
|                                |             | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.5 TO 1        | ATMOS           | 1                  | 2         | TEST-IDENT  | NA          |         |
| MANUFACTURER: ENDEVCO          |             | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1.95            | 2               | 1                  | 2,4       | AN+DATA     | NA          |         |
|                                |             | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 45              | 63              | 1                  | 2         | TEST-IDENT  | YES         |         |
| MODEL NO.:                     | 2273AM-1    | RH (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                 |                    |           |             |             | NOTE 1  |
|                                |             | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 90              | 100             | 1                  | 2         | TEST-IDENT  | NA          |         |
| SAFETY FUNCTION: - - -         |             | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 90              | 100             | 1                  | 2         | TEST-IDENT  | NA          |         |
| MONITORS RELIEF VALVE          |             | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | STEAM           | STEAM           | 1                  | 2         | TEST-IDENT  | NA          |         |
| POSITION                       |             | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                 |                    |           |             |             | NOTE 1  |
|                                |             | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                 |                    |           |             |             |         |
| OP. CODE:                      | A           | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 7.8E7           | 2.22E8          | 4                  | 2         | TEST-IDENT  | YES         | NOTE 3  |
|                                |             | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                 |                    |           |             |             |         |
|                                |             | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                 |                    |           |             |             |         |
|                                |             | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                 |                    |           |             |             |         |
| ACCURACY - -                   |             | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | YES             | YES             | 1                  | 2         | TEST-IDENT  | NA          |         |
|                                |             | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: NA                       |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             |         |
| DEMO: NA                       |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             |         |
| IZONE NO.:                     | PC289680    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                   | NA          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             |         |
| SPRAY:                         | YES         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             |         |
| REFERENCE: 2 (NOTE 4)          |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             |         |
| (YEARS): 40                    |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             |         |
| REFERENCE: 2 (NOTE 4)          |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                 |                    |           |             |             |         |
|                                |             | <p>DOCUMENT REFERENCE:</p> <p>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]</p> <p>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E</p> <p>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C3</p> <p>4. SWEC CALC NO. 12177-EQS-30</p> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2.OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.</p> <p>3.COMBINED RADIATION FOR GAMMA, BETA, &amp; NEUTRON FOR 40 YEARS OF QUALIFIED LIFE PLUS ACCIDENT, INCLUDING APPLICABLE BETA REDUCTION AND NEUTRON CONVERSION 7.8E7 RADDS.</p> <p>4.CABLE CONNECTOR SHOULD BE REPLACED EVERY 9 YEARS TO MAINTAIN QUALIFICATION. SEE REF. 4.</p> |                 |                 |                    |           |             |             |         |
|                                |             | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                 |                    |           |             |             |         |



QUAL REF # C071WAR REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION           |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|-------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 |             | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |             |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                      | 2SVV*NBE237 |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.:                       | C071W       | OP. TIME:                                  | 100 DAYS           | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 2  |
| SYSTEM:                         | MAIN STEAM  | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
| SAFETY RELIEF VALVES            |             | NORMAL                                     | 150                | 150                | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                 |             | ABNORMAL                                   | 190                | 190                | 1                  | 2, 4      | TEST-IDENT     | NA             |         |
|                                 |             | ACCIDENT                                   | 340                | 405                | 1                  | 2         | TEST-IDENT     | YES            |         |
| TYPE: (DESCRIPTION)             |             | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
| ACCELEROMETER                   |             | NORMAL                                     | 0.5 TO 1           | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                 |             | ABNORMAL                                   | 1.95               | 2                  | 1                  | 2, 4      | AN+DATA        | NA             |         |
| MANUFACTURER: ENDEVCO           |             | ACCIDENT                                   | 45                 | 63                 | 1                  | 2         | TEST-IDENT     | YES            |         |
|                                 |             | IRH (%):                                   |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                      | 2273AM-1    | NORMAL                                     | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                 |             | ABNORMAL                                   | 90                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION: - - -          |             | ACCIDENT                                   | STEAM              | STEAM              | 1                  | 2         | TEST-IDENT     | NA             |         |
| MONITORS RELIEF VALVE           |             | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| POSITION                        |             | NORM GAMMA                                 |                    |                    |                    |           |                |                |         |
|                                 |             | ACC GAMMA                                  | 7.8E7              | 2.22E8             | 4                  | 2         | TEST-IDENT     | YES            | NOTE 3  |
| OP. CODE: A                     |             | NORM BETA                                  |                    |                    |                    |           |                |                |         |
|                                 |             | ACC BETA                                   |                    |                    |                    |           |                |                |         |
|                                 |             | NEUTRON                                    |                    |                    |                    |           |                |                |         |
|                                 |             | SPRAY                                      | YES                | YES                | 1                  | 2         | TEST-IDENT     | NA             |         |
| ACCURACY - -                    |             | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: NA                        |             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                        |             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                       | PC289680    |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                    | NA          |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                          | YES         |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |             |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |             |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)           |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |             |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                     |             |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2 (NOTE 4)           |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
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QUAL REF #\_C071WBA\_\_\_\_ REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |         |
|-----------------------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                               | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                               |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2SVV*NBV220                        | OP. TIME:                                       | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 2  |
| SPEC NO.: C071W                               | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: MAIN STEAM                            | NORMAL                                          | 104/88             | 122                | 1                  | 2         | TEST-IDENT     | NA             | NOTE 3  |
| SAFETY RELIEF VALVES                          | ABNORMAL                                        | 94                 | 122                | 1                  | 2         | TEST-IDENT     | NA             |         |
| TYPE: (DESCRIPTION)                           | ACCIDENT                                        | 175                | 405                | 1                  | 2         | TEST-IDENT     | YES            |         |
| CHARGE CONVERTER (PRE AMP)                    | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                               | NORMAL                                          | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                               | ABNORMAL                                        | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |         |
| MANUFACTURER: TEC                             | ACCIDENT                                        | 2.8                | 63                 | 1                  | 2         | TEST-IDENT     | YES            |         |
| MODEL NO.: 504A                               | RH (%)                                          | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                               | NORMAL                                          | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION: - - -                        | ABNORMAL                                        | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
| MONITORS RELIEF VALVE                         | ACCIDENT                                        | 100                | STEAM              | 1                  | 2         | TEST-IDENT     | NA             |         |
| POSITION                                      | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                               | NORM GAMMA                                      | 5.1E5              |                    | 1                  |           |                | NA             |         |
| OP. CODE: A                                   | ACC GAMMA                                       | 5.3E7              | 2.2E8              | 1                  | 2         | TEST-IDENT     | YES            |         |
|                                               | NORM BETA                                       | NA                 |                    | 1                  |           |                | NA             |         |
|                                               | ACC BETA                                        | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                               | NEUTRON                                         | NA                 |                    | 1                  |           |                | NA             |         |
| ACCURACY - -                                  | SPRAY                                           | NA                 | YES                | NA                 | 2         | TEST-IDENT     | NA             |         |
|                                               | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.: SC240135                            |                                                 |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                  | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                |         |
| SPRAY:                                        | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO                      | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY                          | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                |         |
|                                               | SDDF # TEST-07-S11-5002E                        |                    |                    |                    |           |                |                |         |
|                                               | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                |         |
|                                               | FILE NO. 32-8-C3                                |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                  | 4. SWEC CALC NO. 12177-EQS-30                   |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I               |                                                 |                    |                    |                    |           |                |                |         |
|                                               |                                                 |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                          |                                                 |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                  |                                                 |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                          |                                                 |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                   |                                                 |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                  |                                                 |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                                                 |                    |                    |                    |           |                |                |         |

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2. OPERABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.  
3. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]





QUAL REF # C071WBC REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION                                          |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |                                                                                               |                |                |         |
|----------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------------------------------------------------------------------------------------------|----------------|----------------|---------|
|                                                                |             | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                               | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                |             |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED                                                                                     |                |                |         |
| EQUIP NO.:                                                     | 2SVV*NBX222 |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| SPEC NO.:                                                      | C071W       | OP.TIME:                                                                                     | 6 HRS              | >100 DAYS          | 3                  | 4                                                                                             | AN+DATA        | YES            | NOTE 2  |
| SYSTEM:                                                        | MAIN STEAM  | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -                                                                                       | - - - -        | - - - -        | NOTE 1  |
| SAFETY RELIEF VALVES                                           |             | NORMAL                                                                                       | 104/88             | 122                | 1                  | 2                                                                                             | TEST-IDENT     | NA             | NOTE 3  |
|                                                                |             | ABNORMAL                                                                                     | 94                 | 122                | 1                  | 2                                                                                             | TEST-IDENT     | NA             |         |
|                                                                |             | ACCIDENT                                                                                     | 175                | 405                | 1                  | 2                                                                                             | TEST-IDENT     | YES            |         |
| TYPE: (DESCRIPTION)                                            |             | PRESS(PSIG)                                                                                  | - - - -            | - - - -            | - - - -            | - - - -                                                                                       | - - - -        | - - - -        | NOTE 1  |
| CHARGE CONVERTER (PRE AMP)                                     |             | NORMAL                                                                                       | -.25"WG            | ATMOS              | 1                  | 2                                                                                             | TEST-IDENT     | NA             |         |
|                                                                |             | ABNORMAL                                                                                     | -.25"WG            | ATMOS              | 1                  | 2                                                                                             | TEST-IDENT     | NA             |         |
|                                                                |             | ACCIDENT                                                                                     | 2.8                | 63                 | 1                  | 2                                                                                             | TEST-IDENT     | YES            |         |
| MANUFACTURER: TEC                                              |             | RH (%) :                                                                                     | - - - -            | - - - -            | - - - -            | - - - -                                                                                       | - - - -        | - - - -        | NOTE 1. |
| MODEL NO.: S04A                                                |             | NORMAL                                                                                       | 50                 | 100                | 1                  | 2                                                                                             | TEST-IDENT     | NA             |         |
|                                                                |             | ABNORMAL                                                                                     | 50                 | 100                | 1                  | 2                                                                                             | TEST-IDENT     | NA             |         |
|                                                                |             | ACCIDENT                                                                                     | 100                | STEAM              | 1                  | 2                                                                                             | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION: - - -                                         |             | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -                                                                                       | - - - -        | - - - -        | NOTE 1  |
| MONITORS RELIEF VALVE POSITION                                 |             | NORM GAMMA                                                                                   | 5.1E5              |                    | 1                  |                                                                                               |                | NA             |         |
|                                                                |             | ACC GAMMA                                                                                    | 5.3E7              | 2.2E8              | 1                  | 2                                                                                             | TEST-IDENT     | YES            |         |
| OP. CODE: A                                                    |             | NORM BETA                                                                                    | NA                 |                    | 1                  |                                                                                               |                | NA             |         |
|                                                                |             | ACC BETA                                                                                     | 6.1E6              |                    | 1                  |                                                                                               |                | YES            |         |
|                                                                |             | NEUTRON                                                                                      | NA                 |                    | 1                  |                                                                                               |                | NA             |         |
|                                                                |             | SPRAY                                                                                        | NA                 | YES                | NA                 | 2                                                                                             | TEST-IDENT     | NA             |         |
| ACCURACY - -                                                   |             | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA                                                                                            | NA             | NA             |         |
| SPEC: NA                                                       |             |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| DEMO: NA                                                       |             |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| ZONE NO.:                                                      | SC240135    |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| SUBMERGENCE:                                                   |             | DOCUMENT REFERENCE:                                                                          |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,                                               |                |                |         |
| SPRAY:                                                         |             | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    | SEE THE DOCUMENT REFERENCED.                                                                  |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                  |             | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-S11-5002E                       |                    |                    |                    | 2.OPREABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS. |                |                |         |
|                                                                |             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C3                                   |                    |                    |                    | 3.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                        |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |             | 4. SWEC CALC NO. 12177-EQS-30                                                                |                    |                    |                    |                                                                                               |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |             |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2            |             |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
|                                                                |             | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |                                                                                               |                |                |         |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION           |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|-------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 |             | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |             |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                      | 2SVV*NBV223 | OP.TIME:                                   | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 2  |
| SPEC NO.:                       | C071W       | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                         | MAIN STEAM  | NORMAL                                     | 104/88             | 122                | 1                  | 2         | TEST-IDENT     | NA             | NOTE 3  |
| SAFETY RELIEF VALVES            |             | ABNORMAL                                   | 94                 | 122                | 1                  | 2         | TEST-IDENT     | NA             |         |
| TYPE: (DESCRIPTION)             |             | ACCIDENT                                   | 175                | 405                | 1                  | 2         | TEST-IDENT     | YES            |         |
| CHARGE CONVERTER (PRE AMP)      |             | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                 |             | NORMAL                                     | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                 |             | ABNORMAL                                   | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |         |
| MANUFACTURER: TEC               |             | ACCIDENT                                   | 2.8                | 63                 | 1                  | 2         | TEST-IDENT     | YES            |         |
| MODEL NO.:                      | 504A        | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1. |
|                                 |             | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                 |             | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION: - - -          |             | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-IDENT     | NA             |         |
| MONITORS RELIEF VALVE           |             | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| POSITION                        |             | NORM GAMMA                                 | 5.1E5              |                    | 1                  |           |                | NA             |         |
|                                 |             | ACC GAMMA                                  | 5.3E7              | 2.2E8              | 1                  | 2         | TEST-IDENT     | YES            |         |
| OP. CODE: A                     |             | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA             |         |
|                                 |             | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                 |             | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 |             | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-IDENT     | NA             |         |
| ACCURACY - -                    |             | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: NA                        |             |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                        |             |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                       |             | SC240135                                   |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                    |             |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                          |             |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |             |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |             |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |             |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |             |                                            |                    |                    |                    |           |                |                |         |
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| MAINT/SURVEILL - - -            |             |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |             |                                            |                    |                    |                    |           |                |                |         |
|                                 |             |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |             |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                     |             |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |             |                                            |                    |                    |                    |           |                |                |         |
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## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                          |  | PARAMETER   | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS |
|----------------------------------------------------------------|--|-------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|---------|
|                                                                |  |             |                    |                    | SPECIFIED          | QUALIFIED |                |                 |         |
| EQUIP NO.: 2SVV*NBY224                                         |  | OP.TIME:    | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES             | NOTE 2  |
| SPEC NO.: C071W                                                |  | TEMP (F):   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| SYSTEM: MAIN STEAM                                             |  | NORMAL      | 104/88             | 122                | 1                  | 2         | TEST-IDENT     | NA              | NOTE 3  |
| SAFETY RELIEF VALVES                                           |  | ABNORMAL    | 94                 | 122                | 1                  | 2         | TEST-IDENT     | NA              |         |
| TYPE: (DESCRIPTION)                                            |  | ACCIDENT    | 175                | 405                | 1                  | 2         | TEST-IDENT     | YES             |         |
| CHARGE CONVERTER (PRE AMP)                                     |  | PRESS(PSIG) | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
|                                                                |  | NORMAL      | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA              |         |
|                                                                |  | ABNORMAL    | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA              |         |
| MANUFACTURER: TEC                                              |  | ACCIDENT    | 2.8                | 63                 | 1                  | 2         | TEST-IDENT     | YES             |         |
| MODEL NO.: 504A                                                |  | RH (%):     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
|                                                                |  | NORMAL      | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA              |         |
|                                                                |  | ABNORMAL    | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA              |         |
| SAFETY FUNCTION: - - -                                         |  | ACCIDENT    | 100                | STEAM              | 1                  | 2         | TEST-IDENT     | NA              |         |
| MONITORS RELIEF VALVE                                          |  | RADIATION:  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| POSITION                                                       |  | NORM GAMMA  | 5.1E5              |                    | 1                  |           |                | NA              |         |
|                                                                |  | ACC GAMMA   | 5.3E7              | 2.2E8              | 1                  | 2         | TEST-IDENT     | YES             |         |
| OP. CODE: A                                                    |  | NORM BETA   | NA                 |                    | 1                  |           |                | NA              |         |
|                                                                |  | ACC BETA    | 6.1E6              |                    | 1                  |           |                | YES             |         |
|                                                                |  | NEUTRON     | NA                 |                    | 1                  |           |                | NA              |         |
|                                                                |  | SPRAY       | NA                 | YES                | NA                 | 2         | TEST-IDENT     | NA              |         |
| ACCURACY - -                                                   |  | SUBMERGENCE | NA                 | NA                 | NA                 | NA        | NA             | NA              |         |
|                                                                |  |             |                    |                    |                    |           |                |                 |         |
|                                                                |  |             |                    |                    |                    |           |                |                 |         |
| ZONE NO.: SC240135                                             |  |             |                    |                    |                    |           |                |                 |         |
| SUBMERGENCE:                                                   |  |             |                    |                    |                    |           |                |                 |         |
| SPRAY:                                                         |  |             |                    |                    |                    |           |                |                 |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                  |  |             |                    |                    |                    |           |                |                 |         |
|                                                                |  |             |                    |                    |                    |           |                |                 |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |  |             |                    |                    |                    |           |                |                 |         |
|                                                                |  |             |                    |                    |                    |           |                |                 |         |
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| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |  |             |                    |                    |                    |           |                |                 |         |
|                                                                |  |             |                    |                    |                    |           |                |                 |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2            |  |             |                    |                    |                    |           |                |                 |         |
|                                                                |  |             |                    |                    |                    |           |                |                 |         |
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[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |                                                                                               |                |                 |         |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------------------------------------------------------------------------------------------|----------------|-----------------|---------|
|                                                                | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                               | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS |
|                                                                |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED                                                                                     |                |                 |         |
| EQUIP NO.:      2SVV*NBY225                                    | OP.TIME:                                                                                     | 6 HRS              | >100 DAYS          | 3                  | 4                                                                                             | AN+DATA        | YES             | NOTE 2  |
| SPEC NO.:       C071W                                          | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -                                                                                       | - - - -        | - - - -         | NOTE 1  |
| SYSTEM:          MAIN STEAM                                    | NORMAL                                                                                       | 104/88             | 122                | 1                  | 2                                                                                             | TEST-IDENT     | NA              | NOTE 3  |
| SAFETY RELIEF VALVES                                           | ABNORMAL                                                                                     | 94                 | 122                | 1                  | 2                                                                                             | TEST-IDENT     | NA              |         |
| TYPE: (DESCRIPTION)                                            | ACCIDENT                                                                                     | 175                | 405                | 1                  | 2                                                                                             | TEST-IDENT     | YES             |         |
| CHARGE CONVERTER (PRE AMP)                                     | PRESS(PSIG)                                                                                  | - - - -            | - - - -            | - - - -            | - - - -                                                                                       | - - - -        | - - - -         | NOTE 1  |
|                                                                | NORMAL                                                                                       | -.25"WG            | ATMOS              | 1                  | 2                                                                                             | TEST-IDENT     | NA              |         |
| MANUFACTURER: TEC                                              | ABNORMAL                                                                                     | -.25"WG            | ATMOS              | 1                  | 2                                                                                             | TEST-IDENT     | NA              |         |
|                                                                | ACCIDENT                                                                                     | 2.8                | 63                 | 1                  | 2                                                                                             | TEST-IDENT     | YES             |         |
| MODEL NO.:     504A                                            | RH (%) :                                                                                     | - - - -            | - - - -            | - - - -            | - - - -                                                                                       | - - - -        | - - - -         | NOTE 1. |
|                                                                | NORMAL                                                                                       | 50                 | 100                | 1                  | 2                                                                                             | TEST-IDENT     | NA              |         |
| SAFETY FUNCTION: -- --                                         | ABNORMAL                                                                                     | 50                 | 100                | 1                  | 2                                                                                             | TEST-IDENT     | NA              |         |
| MONITORS RELIEF VALVE                                          | ACCIDENT                                                                                     | 100                | STEAM              | 1                  | 2                                                                                             | TEST-IDENT     | NA              |         |
| POSITION                                                       | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -                                                                                       | - - - -        | - - - -         | NOTE 1  |
|                                                                | NORM GAMMA                                                                                   | 5.1E5              |                    | 1                  |                                                                                               |                | NA              |         |
| OP. CODE:       A                                              | ACC GAMMA                                                                                    | 5.3E7              | 2.2E8              | 1                  | 2                                                                                             | TEST-IDENT     | YES             |         |
|                                                                | NORM BETA                                                                                    | NA                 |                    | 1                  |                                                                                               |                | NA              |         |
|                                                                | ACC BETA                                                                                     | 6.1E6              |                    | 1                  |                                                                                               |                | YES             |         |
|                                                                | NEUTRON                                                                                      | NA                 |                    | 1                  |                                                                                               |                | NA              |         |
|                                                                | SPRAY                                                                                        | NA                 | YES                | NA                 | 2                                                                                             | TEST-IDENT     | NA              |         |
| ACCURACY -- --                                                 | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA                                                                                            | NA             | NA              |         |
| SPEC: NA                                                       |                                                                                              |                    |                    |                    |                                                                                               |                |                 |         |
| DEMO: NA                                                       |                                                                                              |                    |                    |                    |                                                                                               |                |                 |         |
| ZONE NO.:       SC240135                                       |                                                                                              |                    |                    |                    |                                                                                               |                |                 |         |
| SUBMERGENCE:                                                   | DOCUMENT REFERENCE:                                                                          |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,                                               |                |                 |         |
| SPRAY:                                                         | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    | SEE THE DOCUMENT REFERENCED.                                                                  |                |                 |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                  | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E                       |                    |                    |                    | 2.OPREABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS. |                |                 |         |
|                                                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C3                                   |                    |                    |                    | 3.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                        |                |                 |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I | 4. SWEC CALC NO. 12177-EQS-30                                                                |                    |                    |                    |                                                                                               |                |                 |         |
| Maint/Surveill -- --<br>REFERENCE: 2                           |                                                                                              |                    |                    |                    |                                                                                               |                |                 |         |
| Qualified Life -- --<br>(YEARS): 40<br>REFERENCE: 2            |                                                                                              |                    |                    |                    |                                                                                               |                |                 |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.                  |                                                                                              |                    |                    |                    |                                                                                               |                |                 |         |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION           |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                 |                 |                    |                                                                                               |             |             |         |
|---------------------------------|-------------|----------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------------------------------------------------------------------------------------------|-------------|-------------|---------|
|                                 |             | PARAMETER                                                                                    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |                                                                                               | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                 |             |                                                                                              |                 |                 | SPECIFIED          | QUALIFIED                                                                                     |             |             |         |
| EQUIP NO.:                      | 2SVV*NBV226 | OP. TIME:                                                                                    | 100 DAYS        | >100 DAYS       | 3                  | 4                                                                                             | AN+DATA     | YES         | NOTE 2  |
| SPEC NO.:                       | C071W       | TEMP (F):                                                                                    |                 |                 |                    |                                                                                               |             |             | NOTE 1  |
| SYSTEM:                         | MAIN STEAM  | NORMAL                                                                                       | 104/88          | 122             | 1                  | 2                                                                                             | TEST-IDENT  | NA          | NOTE 3  |
| SAFETY RELIEF VALVES            |             | ABNORMAL                                                                                     | 94              | 122             | 1                  | 2                                                                                             | TEST-IDENT  | NA          |         |
| TYPE: (DESCRIPTION)             |             | ACCIDENT                                                                                     | 175             | 405             | 1                  | 2                                                                                             | TEST-IDENT  | YES         |         |
| CHARGE CONVERTER (PRE AMP)      |             | PRESS (PSIG)                                                                                 |                 |                 |                    |                                                                                               |             |             | NOTE 1  |
|                                 |             | NORMAL                                                                                       | -.25"WG         | ATMOS           | 1                  | 2                                                                                             | TEST-IDENT  | NA          |         |
|                                 |             | ABNORMAL                                                                                     | -.25"WG         | ATMOS           | 1                  | 2                                                                                             | TEST-IDENT  | NA          |         |
| MANUFACTURER: TEC               |             | ACCIDENT                                                                                     | 2.8             | 63              | 1                  | 2                                                                                             | TEST-IDENT  | YES         |         |
| MODEL NO.:                      | 504A        | RH (%):                                                                                      |                 |                 |                    |                                                                                               |             |             | NOTE 1  |
|                                 |             | NORMAL                                                                                       | 50              | 100             | 1                  | 2                                                                                             | TEST-IDENT  | NA          |         |
|                                 |             | ABNORMAL                                                                                     | 50              | 100             | 1                  | 2                                                                                             | TEST-IDENT  | NA          |         |
| SAFETY FUNCTION: - - -          |             | ACCIDENT                                                                                     | 100             | STEAM           | 1                  | 2                                                                                             | TEST-IDENT  | NA          |         |
| MONITORS RELIEF VALVE           |             | RADIATION:                                                                                   |                 |                 |                    |                                                                                               |             |             | NOTE 1  |
| POSITION                        |             | NORM GAMMA                                                                                   | 5.1E5           |                 | 1                  |                                                                                               |             | NA          |         |
|                                 |             | ACC GAMMA                                                                                    | 5.3E7           | 2.2E8           | 1                  | 2                                                                                             | TEST-IDENT  | YES         |         |
| OP. CODE: A                     |             | NORM BETA                                                                                    | NA              |                 | 1                  |                                                                                               |             | NA          |         |
|                                 |             | ACC BETA                                                                                     | 6.1E6           |                 | 1                  |                                                                                               |             | YES         |         |
|                                 |             | NEUTRON                                                                                      | NA              |                 | 1                  |                                                                                               |             | NA          |         |
|                                 |             | SPRAY                                                                                        | NA              | YES             | NA                 | 2                                                                                             | TEST-IDENT  | NA          |         |
| ACCURACY - -                    |             | SUBMERGENCE                                                                                  | NA              | NA              | NA                 | NA                                                                                            | NA          | NA          |         |
| SPEC: NA                        |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| DEMO: NA                        |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| ZONE NO.:                       | SC240135    |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| SUBMERGENCE:                    |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| SPRAY:                          |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| EQUIPMENT NOT SUBJECT TO        |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| SUBMERGENCE OR SPRAY            |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| DOCUMENTATION ACCEPTABILITY:    |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| ACCEPTABLE TO NUREG 0588, CAT I |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| MAINT/SURVEILL - - -            |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| REFERENCE: 2                    |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| QUALIFIED LIFE - - -            |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| (YEARS): 40                     |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
| REFERENCE: 2                    |             |                                                                                              |                 |                 |                    |                                                                                               |             |             |         |
|                                 |             | DOCUMENT REFERENCE:                                                                          |                 |                 |                    |                                                                                               |             |             |         |
|                                 |             | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EGEDC-1, REV 3, DEC 20, 1985. [R2] |                 |                 |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                  |             |             |         |
|                                 |             | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E                       |                 |                 |                    | 2.OPREABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS. |             |             |         |
|                                 |             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C1                                   |                 |                 |                    | 3.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                        |             |             |         |
|                                 |             | 4. SWEC CALC NO. 12177-EQS-30                                                                |                 |                 |                    |                                                                                               |             |             |         |
|                                 |             | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                 |                 |                    |                                                                                               |             |             |         |



EQUIPMENT DESCRIPTION

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[R2] INDICATES CHANGES MADE IN THIS REVISION.



09-Feb-86

QUAL REF #\_C071WBI\_ REV 2

| EQUIPMENT DESCRIPTION                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                 |                    |           |             |             |         |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                               | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2SVV*NBV228                        | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 6 HRS           | >100 DAYS       | 3                  | 4         | AN+DATA     | YES         | NOTE 2  |
| SPEC NO.: C071W                               | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 104/88          | 122             | 1                  | 2         | TEST-IDENT  | NA          | NOTE 1  |
| SYSTEM: MAIN STEAM                            | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 94              | 122             | 1                  | 2         | TEST-IDENT  | NA          | NOTE 3  |
| SAFETY RELIEF VALVES                          | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 175             | 405             | 1                  | 2         | TEST-IDENT  | YES         |         |
| TYPE: (DESCRIPTION)                           | PRESS (PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                 |                    |           |             |             | NOTE 1  |
| CHARGE CONVERTER (PRE AMP)                    | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -.25"WG         | ATMOS           | 1                  | 2         | TEST-IDENT  | NA          |         |
|                                               | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -.25"WG         | ATMOS           | 1                  | 2         | TEST-IDENT  | NA          |         |
| MANUFACTURER: TEC                             | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2.8             | 63              | 1                  | 2         | TEST-IDENT  | YES         |         |
| MODEL NO.: 504A                               | RRH (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                 |                    |           |             |             | NOTE 1  |
|                                               | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 50              | 100             | 1                  | 2         | TEST-IDENT  | NA          |         |
| SAFETY FUNCTION: - - -                        | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 50              | 100             | 1                  | 2         | TEST-IDENT  | NA          |         |
| MONITORS RELIEF VALVE                         | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 100             | STEAM           | 1                  | 2         | TEST-IDENT  | NA          |         |
| POSITION                                      | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                 |                    |           |             |             | NOTE 1  |
|                                               | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5.1E5           |                 | 1                  |           |             | NA          |         |
| OP. CODE: A                                   | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5.3E7           | 2.2E8           | 1                  | 2         | TEST-IDENT  | YES         |         |
|                                               | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                               | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 6.1E6           |                 | 1                  |           |             | YES         |         |
|                                               | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NA              |                 | 1                  |           |             | NA          |         |
| ACCURACY - -                                  | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NA              | YES             | NA                 | 2         | TEST-IDENT  | NA          |         |
| SUBMERGENCE                                   | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ZONE NO.: SC240135                            | <p>DOCUMENT REFERENCE:</p> <p>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]</p> <p>2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E</p> <p>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C3</p> <p>4. SWEC CALC NO. 12177-EQS-30</p> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2.OPREABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.</p> <p>3.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.</p> |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                 |                    |           |             |             |         |
| SPRAY:                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588, CAT I               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 40                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                 |                    |           |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                 |                    |           |             |             |         |



09-Feb-86

| EQUIPMENT DESCRIPTION                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|-----------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                               | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                               |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2SVV*NBV229                        | OP.TIME:                                   | 100 DAYS        | >100 DAYS       | 3                  | 4         | AN+DATA     | YES         | NOTE 2  |
| SPEC NO.: C071W                               | TEMP (F):                                  | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| SYSTEM: MAIN STEAM                            | NORMAL                                     | 104/88          | 122             | 1                  | 2         | TEST-IDENT  | NA          | NOTE 3  |
| SAFETY RELIEF VALVES                          | ABNORMAL                                   | 94              | 122             | 1                  | 2         | TEST-IDENT  | NA          |         |
| TYPE: (DESCRIPTION)                           | ACCIDENT                                   | 175             | 405             | 1                  | 2         | TEST-IDENT  | YES         |         |
| CHARGE CONVERTER (PRE AMP)                    | PRESS(PSIG)                                | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                               | NORMAL                                     | -.25"WG         | ATMOS           | 1                  | 2         | TEST-IDENT  | NA          |         |
|                                               | ABNORMAL                                   | -.25"WG         | ATMOS           | 1                  | 2         | TEST-IDENT  | NA          |         |
| MANUFACTURER: TEC                             | ACCIDENT                                   | 2.8             | 63              | 1                  | 2         | TEST-IDENT  | YES         |         |
|                                               | RH (%):                                    | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| MODEL NO.: 504A                               | NORMAL                                     | 50              | 100             | 1                  | 2         | TEST-IDENT  | NA          |         |
|                                               | ABNORMAL                                   | 50              | 100             | 1                  | 2         | TEST-IDENT  | NA          |         |
| SAFETY FUNCTION: - - -                        | ACCIDENT                                   | 100             | STEAM           | 1                  | 2         | TEST-IDENT  | NA          |         |
| MONITORS RELIEF VALVE POSITION                | RADIATION:                                 | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                               | NORM GAMMA                                 | 5.1E5           |                 | 1                  |           |             | NA          |         |
|                                               | ACC GAMMA                                  | 5.3E7           | 2.2E8           | 1                  | 2         | TEST-IDENT  | YES         |         |
| OP. CODE: A                                   | NORM BETA                                  | NA              |                 | 1                  |           |             | NA          |         |
|                                               | ACC BETA                                   | 6.1E6           |                 | 1                  |           |             | YES         |         |
|                                               | NEUTRON                                    | NA              |                 | 1                  |           |             | NA          |         |
|                                               | SPRAY                                      | NA              | YES             | NA                 | 2         | TEST-IDENT  | NA          |         |
| ACCURACY - -                                  | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: NA                                      |                                            |                 |                 |                    |           |             |             |         |
| DEMO: NA                                      |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.: SC240135                            |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                  |                                            |                 |                 |                    |           |             |             |         |
| SPRAY:                                        |                                            |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                  |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                          |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                  |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                          |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 40                                   |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                  |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2.OPREABILITY PERIOD EXTENDED FROM 33  
DAYS TESTED VALUE, TO 100 DAYS PLUS  
MARGIN BY ANALYSIS.  
3.NORMAL TEMPERATURES ARE SHOWN AS MAX  
DESIGN/AVERAGE.





09-Feb-86

## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]



QUAL REF #\_C071WBL\_\_\_\_ REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                               |
|--------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-----------------------------------------------------------------------------------------------|
|                                | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                       |
|                                |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                               |
| EQUIP NO.: 2SVV*NBV231         |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
| SPEC NO.: C071W                | OP.TIME:                                                                                     | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 2                                                                                        |
| SYSTEM: MAIN STEAM             | TEMP (F):                                                                                    |                    |                    |                    |           |                |                | NOTE 1                                                                                        |
| SAFETY RELIEF VALVES           | NORMAL                                                                                       | 104/88             | 122                | 1                  | 2         | TEST-IDENT     | NA             | NOTE 3                                                                                        |
|                                | ABNORMAL                                                                                     | 94                 | 122                | 1                  | 2         | TEST-IDENT     | NA             |                                                                                               |
| TYPE: (DESCRIPTION)            | ACCIDENT                                                                                     | 175                | 405                | 1                  | 2         | TEST-IDENT     | YES            |                                                                                               |
| CHARGE CONVERTER (PRE AMP)     | PRESS(PSIG)                                                                                  |                    |                    |                    |           |                |                | NOTE 1                                                                                        |
|                                | NORMAL                                                                                       | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |                                                                                               |
|                                | ABNORMAL                                                                                     | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |                                                                                               |
| MANUFACTURER: TEC              | ACCIDENT                                                                                     | 2.8                | 63                 | 1                  | 2         | TEST-IDENT     | YES            |                                                                                               |
|                                | RH (%)                                                                                       |                    |                    |                    |           |                |                | NOTE 1                                                                                        |
| MODEL NO.: 504A                | NORMAL                                                                                       | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |                                                                                               |
|                                | ABNORMAL                                                                                     | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |                                                                                               |
| SAFETY FUNCTION: - - -         | ACCIDENT                                                                                     | 100                | STEAM              | 1                  | 2         | TEST-IDENT     | NA             |                                                                                               |
| MONITORS RELIEF VALVE          | RADIATION:                                                                                   |                    |                    |                    |           |                |                | NOTE 1                                                                                        |
| POSITION                       | NORM GAMMA                                                                                   | 5.1E5              |                    | 1                  |           |                | NA             |                                                                                               |
|                                | ACC GAMMA                                                                                    | 5.3E7              | 2.2E8              | 1                  | 2         | TEST-IDENT     | YES            |                                                                                               |
| OP. CODE: A                    | NORM BETA                                                                                    | NA                 |                    | 1                  |           |                | NA             |                                                                                               |
|                                | ACC BETA                                                                                     | 6.1E6              |                    | 1                  |           |                | YES            |                                                                                               |
|                                | NEUTRON                                                                                      | NA                 |                    | 1                  |           |                | NA             |                                                                                               |
|                                | SPRAY                                                                                        | NA                 | YES                | NA                 | 2         | TEST-IDENT     | NA             |                                                                                               |
| ACCURACY - -                   | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                               |
| SPEC: NA                       |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
| DEMO: NA                       |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
| ZONE NO.: SC240135             |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
| SUBMERGENCE:                   | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                  |
| SPRAY:                         | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2.OPREABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS. |
| EQUIPMENT NOT SUBJECT TO       | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E                       |                    |                    |                    |           |                |                | 3.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                        |
| SUBMERGENCE OR SPRAY           | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C3                                   |                    |                    |                    |           |                |                |                                                                                               |
|                                | 4. SWEC CALC NO. 12177-EQS-30                                                                |                    |                    |                    |           |                |                |                                                                                               |
| DOCUMENTATION ACCEPTABILITY:   |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
| ACCEPTABLE TO NUREG 0588,CAT I |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
|                                |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
|                                |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
| MAINT/SURVEILL - - -           |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
| REFERENCE: 2                   |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
|                                |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
| QUALIFIED LIFE - - -           |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
| (YEARS): 40                    |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
| REFERENCE: 2                   |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
|                                |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
|                                |                                                                                              |                    |                    |                    |           |                |                |                                                                                               |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                               |



NINE MILE POINT - UNIT 2  
DOCKET NUMBER 50-410

# SYSTEM COMPONENT EVALUATION WORK SHEET

PAGE 1  
OF 1

QUAL REF # C071WBM REV 2

09-Feb-86

| EQUIPMENT DESCRIPTION                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                 |         |
|----------------------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|---------|
|                                                                | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS |
|                                                                |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                 |         |
| EQUIP NO.: 2SVV*NBY232                                         |                                            |                    |                    |                    |           |                |                 |         |
| SPEC NO.: C071W                                                | OP.TIME:                                   | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES             | NOTE 2  |
| SYSTEM: MAIN STEAM                                             | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| SAFETY RELIEF VALVES                                           | NORMAL                                     | 104/88             | 122                | 1                  | 2         | TEST-IDENT     | NA              | NOTE 3  |
|                                                                | ABNORMAL                                   | 94                 | 122                | 1                  | 2         | TEST-IDENT     | NA              |         |
| TYPE: (DESCRIPTION)                                            | ACCIDENT                                   | 175                | 405                | 1                  | 2         | TEST-IDENT     | YES             |         |
| CHARGE CONVERTER (PRE AMP)                                     | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
|                                                                | NORMAL                                     | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA              |         |
|                                                                | ABNORMAL                                   | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA              |         |
| MANUFACTURER: TEC                                              | ACCIDENT                                   | 2.8                | 63                 | 1                  | 2         | TEST-IDENT     | YES             |         |
|                                                                | IRH (%) :                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| MODEL NO.: 504A                                                | NORMAL                                     | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA              |         |
|                                                                | ABNORMAL                                   | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA              |         |
| SAFETY FUNCTION: - - -                                         | ACCIDENT                                   | 100                | STEAM              | 1                  | 2         | TEST-IDENT     | NA              |         |
| MONITORS RELIEF VALVE                                          | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| POSITION                                                       | NORM GAMMA                                 | 5.1E5              |                    | 1                  |           |                | NA              |         |
|                                                                | ACC GAMMA                                  | 5.3E7              | 2.2E8              | 1                  | 2         | TEST-IDENT     | YES             |         |
| OP. CODE: A                                                    | NORM BETA                                  | NA                 |                    | 1                  |           |                | NA              |         |
|                                                                | ACC BETA                                   | 6.1E6              |                    | 1                  |           |                | YES             |         |
|                                                                | NEUTRON                                    | NA                 |                    | 1                  |           |                | NA              |         |
|                                                                | SPRAY                                      | NA                 | YES                | NA                 | 2         | TEST-IDENT     | NA              |         |
| ACCURACY - -                                                   | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA              |         |
| SPEC: NA                                                       |                                            |                    |                    |                    |           |                |                 |         |
| DEMO: NA                                                       |                                            |                    |                    |                    |           |                |                 |         |
| ZONE NO.: SC240135                                             |                                            |                    |                    |                    |           |                |                 |         |
| SUBMERGENCE:                                                   |                                            |                    |                    |                    |           |                |                 |         |
| SPRAY:                                                         |                                            |                    |                    |                    |           |                |                 |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                  |                                            |                    |                    |                    |           |                |                 |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |                                            |                    |                    |                    |           |                |                 |         |
|                                                                |                                            |                    |                    |                    |           |                |                 |         |
|                                                                |                                            |                    |                    |                    |           |                |                 |         |
| Maint/Surveill - - -<br>REFERENCE: 2                           |                                            |                    |                    |                    |           |                |                 |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2            |                                            |                    |                    |                    |           |                |                 |         |
|                                                                |                                            |                    |                    |                    |           |                |                 |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.



|                                                                | PARAMETER   | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS |
|----------------------------------------------------------------|-------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|---------|
|                                                                |             |                    |                    | SPECIFIED          | QUALIFIED |                |                 |         |
| EQUIP NO.:    2SVV*NBY233                                      | OP.TIME:    | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA        | YES             | NOTE 2  |
| SPEC NO.:     C071W                                            | TEMP (F):   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - -           | NOTE 1  |
| SYSTEM:       MAIN STEAM                                       | NORMAL      | 104/88             | 122                | 1                  | 2         | TEST-IDENT     | NA              | NOTE 3  |
| SAFETY RELIEF VALVES                                           | ABNORMAL    | 94                 | 122                | 1                  | 2         | TEST-IDENT     | NA              |         |
|                                                                | ACCIDENT    | 175                | 405                | 1                  | 2         | TEST-IDENT     | YES             |         |
| TYPE: (DESCRIPTION)                                            | PRESS(PSIG) | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - -           | NOTE 1  |
| CHARGE CONVERTER (PRE AMP)                                     | NORMAL      | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA              |         |
|                                                                | ABNORMAL    | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA              |         |
| MANUFACTURER: TEC                                              | ACCIDENT    | 2.8                | 63                 | 1                  | 2         | TEST-IDENT     | YES             |         |
|                                                                | RH (%):     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - -           | NOTE 1  |
| MODEL NO.:    504A                                             | NORMAL      | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA              |         |
|                                                                | ABNORMAL    | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA              |         |
| SAFETY FUNCTION: - - -                                         | ACCIDENT    | 100                | STEAM              | 1                  | 2         | TEST-IDENT     | NA              |         |
| MONITORS RELIEF VALVE POSITION                                 | RADIATION:  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - -           | NOTE 1  |
|                                                                | NORM GAMMA  | 5.1E5              |                    | 1                  |           |                | NA              |         |
|                                                                | ACC GAMMA   | 5.3E7              | 2.2E8              | 1                  | 2         | TEST-IDENT     | YES             |         |
| OP. CODE:      A                                               | NORM BETA   | NA                 |                    | 1                  |           |                | NA              |         |
|                                                                | ACC BETA    | 6.1E6              | .                  | 1                  |           |                | YES             |         |
|                                                                | NEUTRON     | NA                 |                    | 1                  |           |                | NA              |         |
|                                                                | SPRAY       | NA                 | YES                | NA                 | 2         | TEST-IDENT     | NA              |         |
| ACCURACY - -                                                   | SUBMERGENCE | NA                 | NA                 | NA                 | NA        | NA             | NA              |         |
| SPEC: NA                                                       |             |                    |                    |                    |           |                |                 |         |
| DEMO: NA                                                       |             |                    |                    |                    |           |                |                 |         |
| ZONE NO.:     SC240135                                         |             |                    |                    |                    |           |                |                 |         |
| SUBMERGENCE:                                                   |             |                    |                    |                    |           |                |                 |         |
| SPRAY:                                                         |             |                    |                    |                    |           |                |                 |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY                  |             |                    |                    |                    |           |                |                 |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I |             |                    |                    |                    |           |                |                 |         |
|                                                                |             |                    |                    |                    |           |                |                 |         |
|                                                                |             |                    |                    |                    |           |                |                 |         |
|                                                                |             |                    |                    |                    |           |                |                 |         |
|                                                                |             |                    |                    |                    |           |                |                 |         |
|                                                                |             |                    |                    |                    |           |                |                 |         |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                           |             |                    |                    |                    |           |                |                 |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2            |             |                    |                    |                    |           |                |                 |         |
|                                                                |             |                    |                    |                    |           |                |                 |         |
|                                                                |             |                    |                    |                    |           |                |                 |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |                                                                                               |                |                |         |
|-----------------------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------------------------------------------------------------------------------------------|----------------|----------------|---------|
|                                               | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |                                                                                               | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                               |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED                                                                                     |                |                |         |
| EQUIP NO.: 2SVV*NB234                         | OP.TIME:                                                                                     | 100 DAYS           | >100 DAYS          | 3                  | 4                                                                                             | AN+DATA        | YES            | NOTE 2  |
| SPEC NO.: C071W                               | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -                                                                                       | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: MAIN STEAM                            | NORMAL                                                                                       | 104/88             | 122                | 1                  | 2                                                                                             | TEST-IDENT     | NA             | NOTE 3  |
| SAFETY RELIEF VALVES                          | ABNORMAL                                                                                     | 94                 | 122                | 1                  | 2                                                                                             | TEST-IDENT     | NA             |         |
| TYPE: (DESCRIPTION)                           | ACCIDENT                                                                                     | 175                | 405                | 1                  | 2                                                                                             | TEST-IDENT     | YES            |         |
| CHARGE CONVERTER (PRE AMP)                    | PRESS (PSIG)                                                                                 | - - - -            | - - - -            | - - - -            | - - - -                                                                                       | - - - -        | - - - -        | NOTE 1  |
|                                               | NORMAL                                                                                       | -.25"WG            | ATMOS              | 1                  | 2                                                                                             | TEST-IDENT     | NA             |         |
|                                               | ABNORMAL                                                                                     | -.25"WG            | ATMOS              | 1                  | 2                                                                                             | TEST-IDENT     | NA             |         |
| MANUFACTURER: TEC                             | ACCIDENT                                                                                     | 2.8                | 63                 | 1                  | 2                                                                                             | TEST-IDENT     | YES            |         |
|                                               | RH (%)                                                                                       | - - - -            | - - - -            | - - - -            | - - - -                                                                                       | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.: 504A                               | NORMAL                                                                                       | 50                 | 100                | 1                  | 2                                                                                             | TEST-IDENT     | NA             |         |
|                                               | ABNORMAL                                                                                     | 50                 | 100                | 1                  | 2                                                                                             | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION: - - -                        | ACCIDENT                                                                                     | 100                | STEAM              | 1                  | 2                                                                                             | TEST-IDENT     | NA             |         |
| MONITORS RELIEF VALVE                         | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -                                                                                       | - - - -        | - - - -        | NOTE 1  |
| POSITION                                      | NORM GAMMA                                                                                   | 5.1E5              |                    | 1                  |                                                                                               |                | NA             |         |
|                                               | ACC GAMMA                                                                                    | 5.3E7              | 2.2E8              | 1                  | 2                                                                                             | TEST-IDENT     | YES            |         |
| OP. CODE: A                                   | NORM BETA                                                                                    | NA                 |                    | 1                  |                                                                                               |                | NA             |         |
|                                               | ACC BETA                                                                                     | 6.1E6              |                    | 1                  |                                                                                               |                | YES            |         |
|                                               | NEUTRON                                                                                      | NA                 |                    | 1                  |                                                                                               |                | NA             |         |
|                                               | SPRAY                                                                                        | NA                 | YES                | NA                 | 2                                                                                             | TEST-IDENT     | NA             |         |
| ACCURACY - -                                  | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA                                                                                            | NA             | NA             |         |
| SPEC: NA                                      |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| DEMO: NA                                      |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| ZONE NO.: SC240135                            |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| SUBMERGENCE:                                  | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |                                                                                               |                |                |         |
| SPRAY:                                        | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                  |                |                |         |
| EQUIPMENT NOT SUBJECT TO                      | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E                       |                    |                    |                    | 2.OPREABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS. |                |                |         |
| SUBMERGENCE OR SPRAY                          | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C1                                   |                    |                    |                    | 3.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                        |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                  | 4. SWEC CALC NO. 12177-EQS-30                                                                |                    |                    |                    |                                                                                               |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT 1                |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| MAINT/SURVEILL - - -                          |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| REFERENCE: 2                                  |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| QUALIFIED LIFE - - -                          |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| (YEARS): 40                                   |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| REFERENCE: 2                                  |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                                                                                              |                    |                    |                    |                                                                                               |                |                |         |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                         | PARAMETER    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|-----------------------------------------------|--------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                               |              |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2SVV*NBX235                        | OP.TIME:     | 6 HRS           | >100 DAYS       | 3                  | 4         | AN+DATA     | YES         | NOTE 2  |
| SPEC NO.: C071W                               | TEMP (F):    | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| SYSTEM: MAIN STEAM                            | NORMAL       | 104/88          | 122             | 1                  | 2         | TEST-IDENT  | NA          | NOTE 3  |
| SAFETY RELIEF VALVES                          | ABNORMAL     | 94              | 122             | 1                  | 2         | TEST-IDENT  | NA          |         |
| TYPE: (DESCRIPTION)                           | ACCIDENT     | 175             | 405             | 1                  | 2         | TEST-IDENT  | YES         |         |
| CHARGE CONVERTER (PRE AMP)                    | PRESS (PSIG) | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                               | NORMAL       | -.25"WG         | ATMOS           | 1                  | 2         | TEST-IDENT  | NA          |         |
|                                               | ABNORMAL     | -.25"WG         | ATMOS           | 1                  | 2         | TEST-IDENT  | NA          |         |
| MANUFACTURER: TEC                             | ACCIDENT     | 2.8             | 63              | 1                  | 2         | TEST-IDENT  | YES         |         |
| MODEL NO.: 504A                               | RH (%):      | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                               | NORMAL       | 50              | 100             | 1                  | 2         | TEST-IDENT  | NA          |         |
|                                               | ABNORMAL     | 50              | 100             | 1                  | 2         | TEST-IDENT  | NA          |         |
| SAFETY FUNCTION: - - -                        | ACCIDENT     | 100             | STEAM           | 1                  | 2         | TEST-IDENT  | NA          |         |
| MONITORS RELIEF VALVE                         | RADIATION:   | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| POSITION                                      | NORM GAMMA   | 5.1E5           |                 | 1                  |           |             | NA          |         |
|                                               | ACC GAMMA    | 5.3E7           | 2.2E8           | 1                  | 2         | TEST-IDENT  | YES         |         |
| OP. CODE: A                                   | NORM BETA    | NA              |                 | 1                  |           |             | NA          |         |
|                                               | ACC BETA     | 6.1E6           |                 | 1                  |           |             | YES         |         |
|                                               | NEUTRON      | NA              |                 | 1                  |           |             | NA          |         |
|                                               | SPRAY        | NA              | YES             | NA                 | 2         | TEST-IDENT  | NA          |         |
| ACCURACY - -                                  | SUBMERGENCE  | NA              | NA              | NA                 | NA        | NA          | NA          |         |
|                                               |              |                 |                 |                    |           |             |             |         |
| ZONE NO.: SC240135                            |              |                 |                 |                    |           |             |             |         |
| SUBMERGENCE:                                  |              |                 |                 |                    |           |             |             |         |
| SPRAY:                                        |              |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY |              |                 |                 |                    |           |             |             |         |
|                                               |              |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                  |              |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                |              |                 |                 |                    |           |             |             |         |
|                                               |              |                 |                 |                    |           |             |             |         |
|                                               |              |                 |                 |                    |           |             |             |         |
|                                               |              |                 |                 |                    |           |             |             |         |
|                                               |              |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                          |              |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                  |              |                 |                 |                    |           |             |             |         |
|                                               |              |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                          |              |                 |                 |                    |           |             |             |         |
| (YEARS): 40                                   |              |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                  |              |                 |                 |                    |           |             |             |         |
|                                               |              |                 |                 |                    |           |             |             |         |
|                                               |              |                 |                 |                    |           |             |             |         |
|                                               |              |                 |                 |                    |           |             |             |         |
|                                               |              |                 |                 |                    |           |             |             |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2.OPREABILITY PERIOD EXTENDED FROM 33  
DAYS TESTED VALUE, TO 100 DAYS PLUS  
MARGIN BY ANALYSIS.  
3.NORMAL TEMPERATURES ARE SHOWN AS MAX  
DESIGN/AVERAGE.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                                                 |                |         |
|--------------------------------|-------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|-------------------------------------------------|----------------|---------|
|                                |             | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD                                  | MARGIN<br>DEMO | REMARKS |
|                                |             |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                                                 |                |         |
| EQUIP NO.:                     | 2SVV*NBY236 | OP.TIME:                                        | 6 HRS              | >100 DAYS          | 3                  | 4         | AN+DATA                                         | YES            | NOTE 2  |
| SPEC NO.:                      | C071W       | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -                                         | - - - -        | NOTE 1  |
| SYSTEM:                        | MAIN STEAM  | NORMAL                                          | 104/88             | 122                | 1                  | 2         | TEST-IDENT                                      | NA             | NOTE 3  |
| SAFETY RELIEF VALVES           |             | ABNORMAL                                        | 94                 | 122                | 1                  | 2         | TEST-IDENT                                      | NA             |         |
| TYPE: (DESCRIPTION)            |             | ACCIDENT                                        | 175                | 405                | 1                  | 2         | TEST-IDENT                                      | YES            |         |
| CHARGE CONVERTER (PRE AMP)     |             | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -                                         | - - - -        | NOTE 1  |
|                                |             | NORMAL                                          | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT                                      | NA             |         |
|                                |             | ABNORMAL                                        | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT                                      | NA             |         |
| MANUFACTURER: TEC              |             | ACCIDENT                                        | 2.8                | 63                 | 1                  | 2         | TEST-IDENT                                      | YES            |         |
|                                |             | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -                                         | - - - -        | NOTE 1  |
| MODEL NO.:                     | 504A        | NORMAL                                          | 50                 | 100                | 1                  | 2         | TEST-IDENT                                      | NA             |         |
|                                |             | ABNORMAL                                        | 50                 | 100                | 1                  | 2         | TEST-IDENT                                      | NA             |         |
| SAFETY FUNCTION: - - -         |             | ACCIDENT                                        | 100                | STEAM              | 1                  | 2         | TEST-IDENT                                      | NA             |         |
| MONITORS RELIEF VALVE          |             | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -                                         | - - - -        | NOTE 1  |
| POSITION                       |             | NORM GAMMA                                      | 5.1E5              |                    | 1                  |           |                                                 | NA             |         |
|                                |             | ACC GAMMA                                       | 5.3E7              | 2.2E8              | 1                  | 2         | TEST-IDENT                                      | YES            |         |
| OP. CODE: A                    |             | NORM BETA                                       | NA                 |                    | 1                  |           |                                                 | NA             |         |
|                                |             | ACC BETA                                        | 6.1E6              |                    | 1                  |           |                                                 | YES            |         |
|                                |             | NEUTRON                                         | NA                 |                    | 1                  |           |                                                 | NA             |         |
|                                |             | SPRAY                                           | NA                 | YES                | NA                 | 2         | TEST-IDENT                                      | NA             |         |
| ACCURACY - -                   |             | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA                                              | NA             |         |
| SPEC: NA                       |             |                                                 |                    |                    |                    |           |                                                 |                |         |
| DEMG: NA                       |             |                                                 |                    |                    |                    |           |                                                 |                |         |
| ZONE NO.:                      | SC240135    |                                                 |                    |                    |                    |           |                                                 |                |         |
| SUBMERGENCE:                   |             | DOCUMENT REFERENCE:                             |                    |                    |                    |           | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |                |         |
| SPRAY:                         |             | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           | SEE THE DOCUMENT REFERENCED.                    |                |         |
|                                |             | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           | 2.OPREABILITY PERIOD EXTENDED FROM 33           |                |         |
| EQUIPMENT NOT SUBJECT TO       |             | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           | DAYS TESTED VALUE, TO 100 DAYS PLUS             |                |         |
| SUBMERGENCE OR SPRAY           |             | SDDF # TEST-07-511-5002E                        |                    |                    |                    |           | MARGIN BY ANALYSIS.                             |                |         |
|                                |             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           | 3.NORMAL TEMPERATURES ARE SHOWN AS MAX          |                |         |
|                                |             | FILE NO. 32-8-C3                                |                    |                    |                    |           | DESIGN/AVERAGE.                                 |                |         |
| DOCUMENTATION ACCEPTABILITY:   |             | 4. SWEC CALC NO. 12177-EQS-30                   |                    |                    |                    |           |                                                 |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
| MAINT/SURVEILL - - -           |             |                                                 |                    |                    |                    |           |                                                 |                |         |
| REFERENCE: 2                   |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
| QUALIFIED LIFE - - -           |             |                                                 |                    |                    |                    |           |                                                 |                |         |
| (YEARS): 40                    |             |                                                 |                    |                    |                    |           |                                                 |                |         |
| REFERENCE: 2                   |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
|                                |             |                                                 |                    |                    |                    |           |                                                 |                |         |
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## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION           | PARAMETER    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|---------------------------------|--------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 |              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2SVV*NBV237          | OP.TIME:     | 100 DAYS           | >100 DAYS          | 3                  | 4         | AN+DATA        | YES            | NOTE 2  |
| SPEC NO.: C071W                 | TEMP (F):    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: MAIN STEAM              | NORMAL       | 104/88             | 122                | 1                  | 2         | TEST-IDENT     | NA             | NOTE 3  |
| SAFETY RELIEF VALVES            | ABNORMAL     | 94                 | 122                | 1                  | 2         | TEST-IDENT     | NA             |         |
| TYPE: (DESCRIPTION)             | ACCIDENT     | 175                | 405                | 1                  | 2         | TEST-IDENT     | YES            |         |
| CHARGE CONVERTER (PRE AMP)      | PRESS (PSIG) | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                 | NORMAL       | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                 | ABNORMAL     | -.25"WG            | ATMOS              | 1                  | 2         | TEST-IDENT     | NA             |         |
| MANUFACTURER: TEC               | ACCIDENT     | 2.8                | 63                 | 1                  | 2         | TEST-IDENT     | YES            |         |
| MODEL NO.: 504A                 | RH (%):      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                 | NORMAL       | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
|                                 | ABNORMAL     | 50                 | 100                | 1                  | 2         | TEST-IDENT     | NA             |         |
| SAFETY FUNCTION: - - -          | ACCIDENT     | 100                | STEAM              | 1                  | 2         | TEST-IDENT     | NA             |         |
| MONITORS RELIEF VALVE           | RADIATION:   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| POSITION                        | NORM GAMMA   | 5.1E5              |                    | 1                  |           |                | NA             |         |
|                                 | ACC GAMMA    | 5.3E7              | 2.2E8              | 1                  | 2         | TEST-IDENT     | YES            |         |
| OP. CODE: A                     | NORM BETA    | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | ACC BETA     | 6.1E6              |                    | 1                  |           |                | YES            |         |
|                                 | NEUTRON      | NA                 |                    | 1                  |           |                | NA             |         |
|                                 | SPRAY        | NA                 | YES                | NA                 | 2         | TEST-IDENT     | NA             |         |
| ACCURACY - -                    | SUBMERGENCE  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: NA                        |              |                    |                    |                    |           |                |                |         |
| DEMO: NA                        |              |                    |                    |                    |           |                |                |         |
| ZONE NO.: SC240135              |              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                    |              |                    |                    |                    |           |                |                |         |
| SPRAY:                          |              |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO        |              |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY            |              |                    |                    |                    |           |                |                |         |
|                                 |              |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |              |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I |              |                    |                    |                    |           |                |                |         |
|                                 |              |                    |                    |                    |           |                |                |         |
|                                 |              |                    |                    |                    |           |                |                |         |
|                                 |              |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |              |                    |                    |                    |           |                |                |         |
|                                 |              |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |              |                    |                    |                    |           |                |                |         |
| (YEARS): 40                     |              |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |              |                    |                    |                    |           |                |                |         |
|                                 |              |                    |                    |                    |           |                |                |         |
|                                 |              |                    |                    |                    |           |                |                |         |
|                                 |              |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:  
 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]  
 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # TEST-07-511-5002E  
 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. 32-8-C1  
 4. SWEC CALC NO. 12177-EQS-30

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
 2.OPREABILITY PERIOD EXTENDED FROM 33 DAYS TESTED VALUE, TO 100 DAYS PLUS MARGIN BY ANALYSIS.  
 3.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                         |               | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                      | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|-----------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                               |               |                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                    | 25CV*XD301B   | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                       | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            | REF 2   |
| SPEC NO.:                                     | E011T         | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                                       | SCV - STATION | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                         | 104/88             | 104/88             | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| CONTROL BUS (VITAL)-AC SUPPLY                 |               | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                       | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| TYPE: (DESCRIPTION)                           |               | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                       | NA                 | NA                 | 1                  | 2         |                | NA             |         |
| GENERAL PURPOSE DRY-TYPE                      |               | PRESS (PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| TRANSFORMER 25 KVA 80/40C                     |               | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                         | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: SQUARE D                        |               | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                       | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| MODEL NO.:                                    | NA            | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                       | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| SAFETY FUNCTION: - - -                        |               | RH (%):                                                                                                                                                                                                                                                                                                                                                                                                                        | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SUPPLY POWER TO CLASS 1E                      |               | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                         | 50                 | 90                 | 1                  | 2         | TEST-SIM       | NA             |         |
| CONTROLS AS REQUIRED                          |               | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                       | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| OP. CODE: A                                   |               | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                       | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| ACCURACY - -                                  |               | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SPEC: NA                                      |               | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                     | 1.8E3              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
| DEMO: NA                                      |               | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                      | 2.2E4              | 1.1E6              | 1                  | 2         | TEST-SIM       | YES            |         |
| ZONE NO.:                                     | ABS 24036     | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                      | NA                 |                    | 1                  | NA        |                | NA             |         |
| SUBMERGENCE: NA [R2]                          |               | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                       | NA                 |                    | 1                  | NA        |                | NA             |         |
| SPRAY: NA [R2]                                |               | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                        | NA                 |                    | 1                  | NA        |                | NA             |         |
| EQUIPMENT NOT SUBJECT TO                      |               | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                 | NA                 | NA                 | NA        |                | NA             |         |
| SUBMERGENCE (OR) SPRAY                        |               | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                    | NA                 | NA                 | NA                 | NA        |                | NA             |         |
| DOCUMENTATION ACCEPTABILITY:                  |               | <p>DOCUMENT REFERENCE:</p> <p>1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]</p> <p>2. SQUARE D / WYLE LAB QUALIFICATION REPORT NO.44509-1,REV B [R2]</p> <p>3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. SCV-2 [R2]</p> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.</p> <p>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.</p> |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I                |               |                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                          |               |                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    |                    |           |                |                |         |
| REFERENCE: NA                                 |               |                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                          |               |                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                   |               |                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                  |               |                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |               |                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                    |                    |           |                |                |         |



NINE MILE POINT - UNIT 2  
DOCKET NUMBER 50-410

SYSTEM COMPONENT EVALUATION WORK SHEET

PAGE 1  
OF 1

QUAL REF #\_E011TAB REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|----------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                              | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                              |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2SCV*XD101A                       | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            | REF 2   |
| SPEC NO.: E011T                              | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: SCV-STATION                          | NORMAL                                     | 104/89             | 104/89             | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| CONTROL BUS (VITAL) AC SUPPLY                | ABNORMAL                                   | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| TYPE: (DESCRIPTION)                          | ACCIDENT                                   | NA                 | NA                 | 1                  | 2         |                | NA             |         |
| GENERAL PURPOSE DRY-TYPE                     | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| TRANSFORMER 25 KVA 80/40C                    | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: SQUARE D                       | ABNORMAL                                   | NA                 | NA                 | 1                  | NA        |                | NA             |         |
|                                              | ACCIDENT                                   | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| MODEL NO.: NA                                | RH (%)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                              | NORMAL                                     | 50                 | 90 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                       | ABNORMAL                                   | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| SUPPLY POWER TO CLASS 1E                     | ACCIDENT                                   | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| CONTROLS AS REQUIRED                         | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                              | NORM GAMMA                                 | 1.8E3              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                              | ACC GAMMA                                  | 2.2E4              | 1.1E6              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE: A                                  | NORM BETA                                  | NA                 |                    | 1                  | NA        |                | NA             |         |
|                                              | ACC BETA                                   | NA                 |                    | 1                  | NA        |                | NA             |         |
|                                              | NEUTRON                                    | NA                 |                    | 1                  | NA        |                | NA             |         |
|                                              | SPRAY                                      | NA                 | NA                 | NA                 | NA        |                | NA             |         |
| ACCURACY - -                                 | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        |                | NA             |         |
| SPEC: NA                                     |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                                     |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: ABN 24033                          |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA [R2]                         |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA [R2]                               |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO                     |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE (OR) SPRAY                       |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                 |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I              |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                         |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: NA                                |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                         |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                 |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION |                                            |                    |                    |                    |           |                |                |         |



| EQUIPMENT DESCRIPTION                        |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|----------------------------------------------|-------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                              |             | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                              |             |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                   | 2EJA*XD100A |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.:                                    | E011T       | OP. TIME:                                  | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            | REF 2   |
| SYSTEM:                                      | EJA - UNIT  | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
| SUBSTATION EMERGENCY AC                      |             | NORMAL                                     | 104/89             | 104/89             | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| CONTROL AND HEATER SUPPLY                    |             | ABNORMAL                                   | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| TYPE: (DESCRIPTION)                          |             | ACCIDENT                                   | NA                 | NA                 | 1                  | 2         |                | NA             |         |
| GENERAL PURPOSE DRY-TYPE                     |             | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
| TRANSFORMER 30 KVA 80/40C                    |             | NORMAL                                     | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
|                                              |             | ABNORMAL                                   | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| MANUFACTURER: SQUARE D                       |             | ACCIDENT                                   | NA                 | NA                 | 1                  | NA        |                | NA             |         |
|                                              |             | IRH (%):                                   |                    |                    |                    |           |                |                | NOTE 1  |
| MODEL NO.:                                   | NA          | NORMAL                                     | 50                 | 90 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                                              |             | ABNORMAL                                   | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| SAFETY FUNCTION: - - -                       |             | ACCIDENT                                   | NA                 | NA                 | 1                  | NA        |                | NA             |         |
| SUPPLY POWER TO CLASS 1E                     |             | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| CONTROLS AS REQUIRED                         |             | NORM GAMMA                                 | 1.8E3              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                              |             | ACC GAMMA                                  | 2.2E4              | 1.1E6              | 1                  | 2         | TEST-SIM       | YES            |         |
| OP. CODE:                                    | A           | NORM BETA                                  | NA                 |                    | 1                  | NA        |                | NA             |         |
|                                              |             | ACC BETA                                   | NA                 |                    | 1                  | NA        |                | NA             |         |
|                                              |             | NEUTRON                                    | NA                 |                    | 1                  | NA        |                | NA             |         |
|                                              |             | SPRAY                                      | NA                 | NA                 | NA                 | NA        |                | NA             |         |
| ACCURACY - -                                 |             | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        |                | NA             |         |
|                                              | SPEC: NA    |                                            |                    |                    |                    |           |                |                |         |
|                                              | DEMO: NA    |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                                    | ABN24033    |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                 | NA [R2]     |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                       | NA [R2]     |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO                     |             |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE (OR) SPRAY                       |             |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                 |             |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I              |             |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                         |             |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: NA                                |             |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                         |             |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                  |             |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                 |             |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION |             |                                            |                    |                    |                    |           |                |                |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

|                                |             | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS                                         |
|--------------------------------|-------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|-------------------------------------------------|
|                                |             |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                 |                                                 |
| EQUIP NO.:                     | 2EJA*XD300B |                                                 |                    |                    |                    |           |                |                 |                                                 |
| SPEC NO.:                      | E011T       | OP.TIME:                                        | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES             | REF 2                                           |
| SYSTEM:                        | EJA - UNIT  | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                          |
| SUBSTATION EMERGENCY AC        |             | NORMAL                                          | 104/88             | 104/88             | 1                  | 2         | TEST-SIM       | NA              | NOTE 2                                          |
| CONTROL AND HEATER SUPPLY      |             | ABNORMAL                                        | NA                 | NA                 | 1                  | NA        |                | NA              |                                                 |
| TYPE: (DESCRIPTION)            |             | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         |                | NA              |                                                 |
| GENERAL PURPOSE DRY-TYPE       |             | PRESS(PSIG)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                          |
| TRANSFORMER 30 KVA 80/40C      |             | NORMAL                                          | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA              |                                                 |
|                                |             | ABNORMAL                                        | NA                 | NA                 | 1                  | NA        |                | NA              |                                                 |
| MANUFACTURER: SQUARE D         |             | ACCIDENT                                        | NA                 | NA                 | 1                  | NA        |                | NA              |                                                 |
|                                |             | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                          |
| MODEL NO.: NA                  |             | NORMAL                                          | 50                 | 90 [R2]            | 1                  | 2         | TEST-SIM       | NA              |                                                 |
|                                |             | ABNORMAL                                        | NA                 | NA                 | 1                  | NA        |                | NA              |                                                 |
| SAFETY FUNCTION: - - -         |             | ACCIDENT                                        | NA                 | NA                 | 1                  | NA        |                | NA              |                                                 |
| SUPPLY POWER TO CLASS 1E       |             | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                          |
| CONTROLS AS REQUIRED           |             | NORM GAMMA                                      | 1.8E3              |                    | 1                  | 2         | TEST-SIM       | NA              |                                                 |
|                                |             | ACC GAMMA                                       | 2.2E4              | 1.1E6              | 1                  | 2         | TEST-SIM       | YES             |                                                 |
| OP. CODE: A                    |             | NORM BETA                                       | NA                 |                    | 1                  | NA        |                | NA              |                                                 |
|                                |             | ACC BETA                                        | NA                 |                    | 1                  | NA        |                | NA              |                                                 |
|                                |             | NEUTRON                                         | NA                 |                    | 1                  | NA        |                | NA              |                                                 |
|                                |             | SPRAY                                           | NA                 | NA                 | NA                 | NA        |                | NA              |                                                 |
| ACCURACY - -                   |             | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        |                | NA              |                                                 |
| SPEC: NA                       |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
| DEMO: NA                       |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
| ZONE NO.: ABS 24036            |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
| SUBMERGENCE: NA [R2]           |             | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                 | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY: NA [R2]                 |             | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                 | SEE THE DOCUMENT REFERENCED.                    |
| EQUIPMENT NOT SUBJECT TO       |             | CRITERIA, EQEDC-1, REV 3, DEC. 20, 1985 [R2]    |                    |                    |                    |           |                |                 | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
| SUBMERGENCE (OR) SPRAY         |             | 2. SQUARE D / WYLE LAB                          |                    |                    |                    |           |                |                 | DESIGN/AVERAGE.                                 |
|                                |             | QUALIFICATION REPORT                            |                    |                    |                    |           |                |                 |                                                 |
|                                |             | NO. 44509-1,REV B [R2]                          |                    |                    |                    |           |                |                 |                                                 |
| DOCUMENTATION ACCEPTABILITY:   |             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: [R1]  |                    |                    |                    |           |                |                 |                                                 |
| ACCEPTABLE TO NUREG 0588,CAT I |             | FILE NO. SCV-2 [R2]                             |                    |                    |                    |           |                |                 |                                                 |
|                                |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
|                                |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
|                                |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
| MAINT/SURVEILL - - -           |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
| REFERENCE: NA                  |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
|                                |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
| QUALIFIED LIFE - - -           |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
| (YEARS): 40                    |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
| REFERENCE: 2                   |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
|                                |             |                                                 |                    |                    |                    |           |                |                 |                                                 |
|                                |             | [R2] INDICATES CHANGES MADE IN THIS REVISION    |                    |                    |                    |           |                |                 |                                                 |





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                           | PARAMETER   | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|-------------------------------------------------|-------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                 |             |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2HTS*XD001                           | OP.TIME:    | 100 DAYS        | >100 DAYS       | 3                  | 2         | TEST-SIM    | YES         | REF 2   |
| SPEC NO.: E011T                                 | TEMP (F):   | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| SYSTEM: HTS - HEAT TRACING SYSTEM               | NORMAL      | 104/89          | 104/89          | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                                 | ABNORMAL    | NA              | NA              | 1                  | NA        |             | NA          |         |
|                                                 | ACCIDENT    | NA              | NA              | 1                  | 2         |             | NA          |         |
| TYPE: (DESCRIPTION)                             | PRESS(PSIG) | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| GENERAL PURPOSE DRY-TYPE                        | NORMAL      | -0.25"WG        | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| TRANSFORMER 25 KVA 80/40C                       | ABNORMAL    | NA              | NA              | 1                  | NA        |             | NA          |         |
|                                                 | ACCIDENT    | NA              | NA              | 1                  | NA        |             | NA          |         |
| MANUFACTURER: SQUARE D                          | RH (%):     | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                                 | NORMAL      | 50              | 90 [R2]         | 1                  | 2         | TEST-SIM    | NA          |         |
| MODEL NO.: NA                                   | ABNORMAL    | NA              | NA              | 1                  | NA        |             | NA          |         |
| SAFETY FUNCTION: - - -                          | ACCIDENT    | NA              | NA              | 1                  | NA        |             | NA          |         |
| SUPPLY POWER TO CLASS 1E                        | RADIATION:  | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| CONTROLS AS REQUIRED                            | NORM GAMMA  | 1.8E3           |                 | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                 | ACC GAMMA   | 2.2E4           | 1.1E6           | 1                  | 2         | TEST-SIM    | YES         |         |
|                                                 | NORM BETA   | NA              |                 | 1                  | NA        |             | NA          |         |
| OP. CODE: A                                     | ACC BETA    | NA              |                 | 1                  | NA        |             | NA          |         |
|                                                 | NEUTRON     | NA              |                 | 1                  | NA        |             | NA          |         |
|                                                 | SPRAY       | NA              | NA              | NA                 | NA        |             | NA          |         |
| ACCURACY - -                                    | SUBMERGENCE | NA              | NA              | NA                 | NA        |             | NA          |         |
| SPEC: NA                                        |             |                 |                 |                    |           |             |             |         |
| DEMO: NA                                        |             |                 |                 |                    |           |             |             |         |
| ZONE NO.: ABN24033                              |             |                 |                 |                    |           |             |             |         |
| SUBMERGENCE: NA [R2]                            |             |                 |                 |                    |           |             |             |         |
| SPRAY: NA [R2]                                  |             |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY |             |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                    |             |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                  |             |                 |                 |                    |           |             |             |         |
|                                                 |             |                 |                 |                    |           |             |             |         |
|                                                 |             |                 |                 |                    |           |             |             |         |
|                                                 |             |                 |                 |                    |           |             |             |         |
|                                                 |             |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                            |             |                 |                 |                    |           |             |             |         |
| REFERENCE: NA                                   |             |                 |                 |                    |           |             |             |         |
|                                                 |             |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                            |             |                 |                 |                    |           |             |             |         |
| (YEARS): 40                                     |             |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                    |             |                 |                 |                    |           |             |             |         |
|                                                 |             |                 |                 |                    |           |             |             |         |
|                                                 |             |                 |                 |                    |           |             |             |         |
|                                                 |             |                 |                 |                    |           |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION    |             |                 |                 |                    |           |             |             |         |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          |                              | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|--------------------------------|------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                |                              | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                |                              |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| =====                          |                              | =====                                           | =====              | =====              | =====              | =====     | =====          | =====          | =====                                           |
| EQUIP NO.:                     | 2HTS*XD003                   | OP.TIME:                                        | 100 DAYS           | >100 DAYS          | 3                  | 2         | TEST-SIM       | YES            | REF 2                                           |
| SPEC NO.:                      | E011T                        | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| SYSTEM:                        | HTS - HEAT<br>TRACING SYSTEM | NORMAL                                          | 104/88             | 104/88             | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                          |
|                                |                              | ABNORMAL                                        | NA                 | NA                 | 1                  | NA        |                | NA             |                                                 |
|                                |                              | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         |                | NA             |                                                 |
| TYPE: (DESCRIPTION)            |                              | PRESS(PSIG)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| GENERAL PURPOSE DRY-TYPE       |                              | NORMAL                                          | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| TRANSFORMER 25 KVA 80/40C      |                              | ABNORMAL                                        | NA                 | NA                 | 1                  | NA        |                | NA             |                                                 |
|                                |                              | ACCIDENT                                        | NA                 | NA                 | 1                  | NA        |                | NA             |                                                 |
| MANUFACTURER: SQUARE D         |                              | RH (%)                                          | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| MODEL NO.:                     | NA                           | NORMAL                                          | 50                 | 90 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |                              | ABNORMAL                                        | NA                 | NA                 | 1                  | NA        |                | NA             |                                                 |
| SAFETY FUNCTION: - - -         |                              | ACCIDENT                                        | NA                 | NA                 | 1                  | NA        |                | NA             |                                                 |
| SUPPLY POWER TO CLASS 1E       |                              | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| HEAT TRACING                   |                              | NORM GAMMA                                      | 1.8E3              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |                              | ACC GAMMA                                       | 2.2E4              | 1.1E6              | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| OP. CODE:                      | A                            | NORM BETA                                       | NA                 |                    | 1                  | NA        |                | NA             |                                                 |
|                                |                              | ACC BETA                                        | NA                 |                    | 1                  | NA        |                | NA             |                                                 |
|                                |                              | NEUTRON                                         | NA                 |                    | 1                  | NA        |                | NA             |                                                 |
|                                |                              | SPRAY                                           | NA                 | NA                 | NA                 | NA        |                | NA             |                                                 |
| ACCURACY - -                   |                              | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        |                | NA             |                                                 |
| SPEC: NA                       |                              | =====                                           | =====              | =====              | =====              | =====     | =====          | =====          | =====                                           |
| DEMO: NA                       |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.:                      | ABS 24036                    |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE: NA [R2]           |                              | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY: NA [R2]                 |                              | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
|                                |                              | CRITERIA, EGEDC-1, REV 3, DEC. 20, 1985 [R2]    |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
| EQUIPMENT NOT SUBJECT TO       |                              | 2. SQUARE D / WYLE LAB                          |                    |                    |                    |           |                |                | DESIGN/AVERAGE.                                 |
| SUBMERGENCE (OR) SPRAY         |                              | QUALIFICATION REPORT                            |                    |                    |                    |           |                |                |                                                 |
|                                |                              | NO. 44509-1,REV B [R2]                          |                    |                    |                    |           |                |                |                                                 |
| DOCUMENTATION ACCEPTABILITY:   |                              | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: [R1]  |                    |                    |                    |           |                |                |                                                 |
| ACCEPTABLE TO NUREG 0588,CAT I |                              | FILE NO. SCV-2 [R2]                             |                    |                    |                    |           |                |                |                                                 |
|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
| MAINT/SURVEILL - - -           |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: NA                  |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
| QUALIFIED LIFE - - -           |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
| (YEARS): 40                    |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                   |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
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|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
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|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
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|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
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|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |                              |                                                 |                    |                    |                    |           |                |                |                                                 |



| EQUIPMENT DESCRIPTION                           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                        |
|-------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|--------------------------------------------------------|
|                                                 | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                |
|                                                 |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                        |
| EQUIP NO.: 2EJA*PNL100A                         |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| SPEC NO.: E014T                                 | OP.TIME:                                                                                     | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN + DATA      | YES            |                                                        |
| SYSTEM: EJA-UNIT SUBSTATION                     | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                 |
| EMERGENCY AC CONTROL & HEATER                   | NORMAL                                                                                       | 104/89             | 104/95             | 1                  | 2         | AN + DATA      | NA             | NOTE 2                                                 |
| SUPPLY                                          | ABNORMAL                                                                                     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
| TYPE: (DESCRIPTION)                             | ACCIDENT                                                                                     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
| PANELBOARD 120/240V CLASS                       | PRESS(PSIG)                                                                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                 |
|                                                 | NORMAL                                                                                       | -0.25              | ATMOS              | 1                  | 2         | AN + DATA      | NA             |                                                        |
|                                                 | ABNORMAL                                                                                     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
| MANUFACTURER: BROWN BOVERI                      | ACCIDENT                                                                                     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
|                                                 | RH (%):                                                                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                 |
| MODEL NO.: CDP4                                 | NORMAL                                                                                       | 50                 | 90                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
|                                                 | ABNORMAL                                                                                     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
| SAFETY FUNCTION: - - -                          | ACCIDENT                                                                                     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
| SUPPLY POWER TO CLASS 1E COMPONENTS             | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                 |
|                                                 | NORM GAMMA                                                                                   | 1.0E3              | -                  | 1                  | 2         | AN + DATA      | NA             |                                                        |
|                                                 | ACC GAMMA                                                                                    | 2.2E4              | 2.0E6              | 1                  | 2         | AN + DATA      | YES            |                                                        |
| OP. CODE: A                                     | NORM BETA                                                                                    | NA                 | -                  | 1                  |           | NA             | NA             |                                                        |
|                                                 | ACC BETA                                                                                     | NA                 | -                  | 1                  |           | NA             | NA             |                                                        |
|                                                 | NEUTRON                                                                                      | NA                 | -                  | 1                  |           | NA             | NA             |                                                        |
|                                                 | SPRAY                                                                                        | NA                 | NA                 | NA                 | NA        |                | NA             |                                                        |
| ACCURACY - -                                    | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        |                | NA             |                                                        |
| SPEC: NA                                        |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| DEMO: NA                                        |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| ZONE NO.: ABN24033                              |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| SUBMERGENCE: NA [R2]                            | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,        |
| SPRAY: NA [R2]                                  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC. 20, 1985 [R2] |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                           |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE Q1.420-5000B                       |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE. |
|                                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. EJA-1                                     |                    |                    |                    |           |                |                |                                                        |
| DOCUMENTATION ACCEPTABILITY:                    |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| ACCEPTABLE TO NUREG 0588,CAT I                  |                                                                                              |                    |                    |                    |           |                |                |                                                        |
|                                                 |                                                                                              |                    |                    |                    |           |                |                |                                                        |
|                                                 |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| MAINT/SURVEILL YES                              |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| REFERENCE: 2                                    |                                                                                              |                    |                    |                    |           |                |                |                                                        |
|                                                 |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| QUALIFIED LIFE - - -                            |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| (YEARS): 40                                     |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| REFERENCE: 2                                    |                                                                                              |                    |                    |                    |           |                |                |                                                        |
|                                                 |                                                                                              |                    |                    |                    |           |                |                |                                                        |
|                                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                 |                    |                    |                    |           |                |                |                                                        |









| EQUIPMENT DESCRIPTION                        | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                 |         |
|----------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|---------|
|                                              | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS |
|                                              |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                 |         |
| EQUIP NO.: 2EJS*PNL101A                      |                                            |                    |                    |                    |           |                |                 |         |
| SPEC NO.: E014T                              | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN + DATA      | YES             |         |
| SYSTEM: EJS-UNIT SUBSTATION                  | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| EMERGENCY AC CONTROL & HEATER                | NORMAL                                     | 104/89             | 104/95             | 1                  | 2         | AN + DATA      | NA              | NOTE 2  |
| SUPPLY                                       | ABNORMAL                                   | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA              |         |
| TYPE: (DESCRIPTION)                          | ACCIDENT                                   | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA              |         |
| PANELBOARD 600 V CLASS                       | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
|                                              | NORMAL                                     | -0.25              | ATMOS              | 1                  | 2         | AN + DATA      | NA              |         |
|                                              | ABNORMAL                                   | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA              |         |
| MANUFACTURER: BROWN BOVERI                   | ACCIDENT                                   | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA              |         |
|                                              | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| MODEL NO.: CDP4                              | NORMAL                                     | 50                 | 90                 | 1                  | 2         | AN + DATA      | NA              |         |
|                                              | ABNORMAL                                   | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA              |         |
| SAFETY FUNCTION: - - -                       | ACCIDENT                                   | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA              |         |
| SUPPLY POWER TO CLASS 1E                     | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| COMPONENTS                                   | NORM GAMMA                                 | 1.8E3              | -                  | 1                  | 2         | AN + DATA      | NA              |         |
|                                              | ACC GAMMA                                  | 2.2E4              | 2.0E6              | 1                  | 2         | AN + DATA      | YES             |         |
| OP. CODE: A                                  | NORM BETA                                  | NA                 | -                  | 1                  |           | NA             | NA              |         |
|                                              | ACC BETA                                   | NA                 | -                  | 1                  |           | NA             | NA              |         |
|                                              | NEUTRON                                    | NA                 | -                  | 1                  |           | NA             | NA              |         |
|                                              | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA              |         |
| ACCURACY - -                                 | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA              |         |
| SPEC: NA                                     |                                            |                    |                    |                    |           |                |                 |         |
| DEMO: NA                                     |                                            |                    |                    |                    |           |                |                 |         |
| ZONE NO.: ABN24033                           |                                            |                    |                    |                    |           |                |                 |         |
| SUBMERGENCE: NA [R2]                         |                                            |                    |                    |                    |           |                |                 |         |
| SPRAY: NA [R2]                               |                                            |                    |                    |                    |           |                |                 |         |
| EQUIPMENT NOT SUBJECT TO                     |                                            |                    |                    |                    |           |                |                 |         |
| SUBMERGENCE (OR) SPRAY                       |                                            |                    |                    |                    |           |                |                 |         |
|                                              |                                            |                    |                    |                    |           |                |                 |         |
| DOCUMENTATION ACCEPTABILITY:                 |                                            |                    |                    |                    |           |                |                 |         |
| ACCEPTABLE TO NUREG 0588,CAT I               |                                            |                    |                    |                    |           |                |                 |         |
|                                              |                                            |                    |                    |                    |           |                |                 |         |
|                                              |                                            |                    |                    |                    |           |                |                 |         |
| MAINT/SURVEILL YES                           |                                            |                    |                    |                    |           |                |                 |         |
| REFERENCE: 2                                 |                                            |                    |                    |                    |           |                |                 |         |
|                                              |                                            |                    |                    |                    |           |                |                 |         |
| QUALIFIED LIFE - - -                         |                                            |                    |                    |                    |           |                |                 |         |
| (YEARS): 40                                  |                                            |                    |                    |                    |           |                |                 |         |
| REFERENCE: 2                                 |                                            |                    |                    |                    |           |                |                 |         |
|                                              |                                            |                    |                    |                    |           |                |                 |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION |                                            |                    |                    |                    |           |                |                 |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX  
DESIGN/AVERAGE.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[R2] INDICATES CHANGES MADE IN THIS REVISION



14-Feb-86

QUAL REF #\_E014TAE\_ REV 2

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                                              |
|---------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|------------------------------------------------------------------------------|
|                                 | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                      |
|                                 |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                              |
| EQUIP NO.: 2EJS*PNL104A         | OP.TIME:                                        | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN + DATA      | YES            |                                                                              |
| SPEC NO.: E014T                 | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                       |
| SYSTEM: EJS-UNIT SUBSTATION     | NORMAL                                          | 104/89             | 104/95             | 1                  | 2         | AN + DATA      | NA             | NOTE 2                                                                       |
| EMERGENCY                       | ABNORMAL                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                                              |
| TYPE: (DESCRIPTION)             | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                                              |
| PANELBOARD 600 V CLASS          | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                       |
|                                 | NORMAL                                          | -0.25              | ATMOS              | 1                  | 2         | AN + DATA      | NA             |                                                                              |
|                                 | ABNORMAL                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                                              |
| MANUFACTURER: BROWN BOVERI      | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                                              |
|                                 | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                       |
| MODEL NO.: CDP4                 | NORMAL                                          | 50                 | 90                 | 1                  | 2         | AN + DATA      | NA             |                                                                              |
|                                 | ABNORMAL                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                                              |
| SAFETY FUNCTION: - - -          | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                                              |
| SUPPLY POWER TO CLASS 1E        | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                       |
| COMPONENTS                      | NORM GAMMA                                      | 1.8E3              | -                  | 1                  | 2         | AN + DATA      | NA             |                                                                              |
|                                 | ACC GAMMA                                       | 2.2E4              | 2.0E6              | 1                  | 2         | AN + DATA      | YES            |                                                                              |
| OP. CODE: A                     | NORM BETA                                       | NA                 | -                  | 1                  |           | NA             | NA             |                                                                              |
|                                 | ACC BETA                                        | NA                 | -                  | 1                  |           | NA             | NA             |                                                                              |
|                                 | NEUTRON                                         | NA                 | -                  | 1                  |           | NA             | NA             |                                                                              |
|                                 | SPRAY                                           | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                              |
| ACCURACY - -                    | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                              |
| SPEC: NA                        |                                                 |                    |                    |                    |           |                |                |                                                                              |
| DEMO: NA                        |                                                 |                    |                    |                    |           |                |                |                                                                              |
| ZONE NO.: ABN24033              |                                                 |                    |                    |                    |           |                |                |                                                                              |
| SUBMERGENCE: NA [R2]            | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED. |
| SPRAY: NA [R2]                  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                       |
| EQUIPMENT NOT SUBJECT TO        | CRITERIA, EGEDC-1, REV 3, DEC. 20, 1985 [R2]    |                    |                    |                    |           |                |                |                                                                              |
| SUBMERGENCE (OR) SPRAY          | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                |                                                                              |
|                                 | SDDF # IEEE 01.420-5000B                        |                    |                    |                    |           |                |                |                                                                              |
|                                 | 3. EQUIPMENT OPERABILITY DATA SHEET:            |                    |                    |                    |           |                |                |                                                                              |
|                                 | FILE NO. EJS-2                                  |                    |                    |                    |           |                |                |                                                                              |
| DOCUMENTATION ACCEPTABILITY:    |                                                 |                    |                    |                    |           |                |                |                                                                              |
| ACCEPTABLE TO NUREG 0588, CAT I |                                                 |                    |                    |                    |           |                |                |                                                                              |
|                                 |                                                 |                    |                    |                    |           |                |                |                                                                              |
|                                 |                                                 |                    |                    |                    |           |                |                |                                                                              |
| MAINT/SURVEILL YES              |                                                 |                    |                    |                    |           |                |                |                                                                              |
| REFERENCE: 2                    |                                                 |                    |                    |                    |           |                |                |                                                                              |
|                                 |                                                 |                    |                    |                    |           |                |                |                                                                              |
| QUALIFIED LIFE - - -            |                                                 |                    |                    |                    |           |                |                |                                                                              |
| (YEARS): 40                     |                                                 |                    |                    |                    |           |                |                |                                                                              |
| REFERENCE: 2                    |                                                 |                    |                    |                    |           |                |                |                                                                              |
|                                 |                                                 |                    |                    |                    |           |                |                |                                                                              |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION    |                    |                    |                    |           |                |                |                                                                              |









## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[R2] INDICATES CHANGES MADE IN THIS REVISION



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[R2] INDICATES CHANGES MADE IN THIS REVISION



QUAL REF #\_E014TAI\_ REV 2

14-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|---------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                 | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                 |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.: 2SCV*PNL101A         | OP.TIME:                                        | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN + DATA      | YES            |                                                 |
| SPEC NO.: E014T                 | TEMP (F):                                       |                    |                    |                    |           |                |                |                                                 |
| SYSTEM: SCV-STATION CONTROL     | NORMAL                                          | 104/89             | 104/95             | 1                  | 2         | AN + DATA      | NA             | NOTE 1                                          |
| BUS (VITAL)-AC SUPPLY           | ABNORMAL                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             | NOTE 2                                          |
| TYPE: (DESCRIPTION)             | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| PANELBOARD 120/240V CLASS       | PRESS(PSIG)                                     |                    |                    |                    |           |                |                |                                                 |
|                                 | NORMAL                                          | -0.25              | ATMOS              | 1                  | 2         | AN + DATA      | NA             | NOTE 1                                          |
|                                 | ABNORMAL                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| MANUFACTURER: BROWN BOVERI      | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
|                                 | RH (%):                                         |                    |                    |                    |           |                |                |                                                 |
| MODEL NO.: CDP4                 | NORMAL                                          | 50                 | 90                 | 1                  | 2         | AN + DATA      | NA             | NOTE 1                                          |
|                                 | ABNORMAL                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| SAFETY FUNCTION: - - -          | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| SUPPLY POWER TO CLASS 1E        | RADIATION:                                      |                    |                    |                    |           |                |                |                                                 |
| COMPONENTS                      | NORM GAMMA                                      | 1.8E3              | -                  | 1                  | 2         | AN + DATA      | NA             | NOTE 1                                          |
|                                 | ACC GAMMA                                       | 2.2E4              | 2.0E6              | 1                  | 2         | AN + DATA      | YES            |                                                 |
| OP. CODE: A                     | NORM BETA                                       | NA                 | -                  | 1                  |           | NA             | NA             |                                                 |
|                                 | ACC BETA                                        | NA                 | -                  | 1                  |           | NA             | NA             |                                                 |
|                                 | NEUTRON                                         | NA                 | -                  | 1                  |           | NA             | NA             |                                                 |
|                                 | SPRAY                                           | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| ACCURACY - -                    | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| SPEC: NA                        |                                                 |                    |                    |                    |           |                |                |                                                 |
| DEMO: NA                        |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.: ABN24033              |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE: NA [R2]            | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                |                                                 |
| SPRAY: NA [R2]                  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| EQUIPMENT NOT SUBJECT TO        | CRITERIA, EQEDC-1, REV 3, DEC. 20, 1985 [R2]    |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
| SUBMERGENCE (OR) SPRAY          | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
|                                 | SDDF # IEEE 01.420-5000B                        |                    |                    |                    |           |                |                | DESIGN/AVERAGE.                                 |
|                                 | 3. EQUIPMENT OPERABILITY DATA SHEET:            |                    |                    |                    |           |                |                |                                                 |
|                                 | FILE NO. SCV-1                                  |                    |                    |                    |           |                |                |                                                 |
| DOCUMENTATION ACCEPTABILITY:    |                                                 |                    |                    |                    |           |                |                |                                                 |
| ACCEPTABLE TO NUREG 0588, CAT I |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                 |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                 |                                                 |                    |                    |                    |           |                |                |                                                 |
| MAINT/SURVEILL YES              |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                    |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                 |                                                 |                    |                    |                    |           |                |                |                                                 |
| QUALIFIED LIFE - - -            |                                                 |                    |                    |                    |           |                |                |                                                 |
| (YEARS): 40                     |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                    |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                 |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION    |                    |                    |                    |           |                |                |                                                 |









14-Feb-86

QUAL REF # E014TAM REV 2

| EQUIPMENT DESCRIPTION                           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                        |
|-------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|--------------------------------------------------------|
|                                                 | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                |
|                                                 |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                        |
| EQUIP NO.: 2VBS*PNLA105                         |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| SPEC NO.: E014T                                 | OP.TIME:                                                                                     | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN + DATA      | YES            |                                                        |
| SYSTEM: VBS-VITAL BUS SYSTEM                    | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                 |
| (INCOMING SUPPLY FROM INVERTER)                 | NORMAL                                                                                       | 104/89             | 104/95             | 1                  | 2         | AN + DATA      | NA             | NOTE 2                                                 |
|                                                 | ABNORMAL                                                                                     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
| TYPE: (DESCRIPTION)                             | ACCIDENT                                                                                     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
| PANELBOARD 120/240 V CLASS                      | PRESS(PSIG)                                                                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                 |
|                                                 | NORMAL                                                                                       | -0.25              | ATMOS              | 1                  | 2         | AN + DATA      | NA             |                                                        |
|                                                 | ABNORMAL                                                                                     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
| MANUFACTURER: BROWN BOVERI                      | ACCIDENT                                                                                     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
|                                                 | RH (%) :                                                                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                 |
| MODEL NO.: SERIES 6 VB                          | NORMAL                                                                                       | 50                 | 90                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
|                                                 | ABNORMAL                                                                                     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
| SAFETY FUNCTION: - - -                          | ACCIDENT                                                                                     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                        |
| SUPPLY POWER TO CLASS 1E COMPONENTS             | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                 |
|                                                 | NORM GAMMA                                                                                   | 1.8E3              | -                  | 1                  | 2         | AN + DATA      | NA             |                                                        |
|                                                 | ACC GAMMA                                                                                    | 2.2E4              | 2.0E6              | 1                  | 2         | AN + DATA      | YES            |                                                        |
| OP. CODE: A                                     | NORM BETA                                                                                    | NA                 | -                  | 1                  |           | NA             | NA             |                                                        |
|                                                 | ACC BETA                                                                                     | NA                 | -                  | 1                  |           | NA             | NA             |                                                        |
|                                                 | NEUTRON                                                                                      | NA                 | -                  | 1                  |           | NA             | NA             |                                                        |
|                                                 | SPRAY                                                                                        | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                        |
| ACCURACY - - -                                  | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                        |
| SPEC: NA                                        |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| DEMO: NA                                        |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| ZONE NO.: ABN24033                              |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| SUBMERGENCE: NA [R2]                            | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,        |
| SPRAY: NA [R2]                                  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EGEDC-1, REV 3, DEC. 20, 1985 [R2] |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                           |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 01.420-5000B                       |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE. |
|                                                 | 3. EQUIPMENT OPERABILITY DATA SHEET: FILE NO. VBS-1                                          |                    |                    |                    |           |                |                |                                                        |
| DOCUMENTATION ACCEPTABILITY:                    |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| ACCEPTABLE TO NUREG 0588,CAT I                  |                                                                                              |                    |                    |                    |           |                |                |                                                        |
|                                                 |                                                                                              |                    |                    |                    |           |                |                |                                                        |
|                                                 |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| MAINT/SURVEILL YES                              |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| REFERENCE: 2                                    |                                                                                              |                    |                    |                    |           |                |                |                                                        |
|                                                 |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| QUALIFIED LIFE - - -                            |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| (YEARS): 40                                     |                                                                                              |                    |                    |                    |           |                |                |                                                        |
| REFERENCE: 2                                    |                                                                                              |                    |                    |                    |           |                |                |                                                        |
|                                                 |                                                                                              |                    |                    |                    |           |                |                |                                                        |
|                                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION                                                 |                    |                    |                    |           |                |                |                                                        |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION               |                      | ENVIRONMENTAL CONDITIONS AND DESIGN CRITERIA    |                    |                    |                    |           |                |                |                                                 |
|-------------------------------------|----------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                     |                      | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                     |                      |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.:                          | 2VBS*PNLB105         | OP.TIME:                                        | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN + DATA      | YES            |                                                 |
| SPEC NO.:                           | E014T                | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| SYSTEM:                             | VBS-VITAL BUS SYSTEM | NORMAL                                          | 104/89             | 104/95             | 1                  | 2         | AN + DATA      | NA             | NOTE 2                                          |
| (INCOMING SUPPLY FROM INVERTER)     |                      | ABNORMAL                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| TYPE: (DESCRIPTION)                 |                      | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| PANELBOARD 120/240 V CLASS          |                      | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
|                                     |                      | NORMAL                                          | -0.25              | ATMOS              | 1                  | 2         | AN + DATA      | NA             |                                                 |
|                                     |                      | ABNORMAL                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| MANUFACTURER: BROWN BOVERI          |                      | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
|                                     |                      | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| MODEL NO.: SERIES 6 VB              |                      | NORMAL                                          | 50                 | 90                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
|                                     |                      | ABNORMAL                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| SAFETY FUNCTION: - - -              |                      | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| SUPPLY POWER TO CLASS 1E COMPONENTS |                      | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
|                                     |                      | NORM GAMMA                                      | 1.0E3              | -                  | 1                  | 2         | AN + DATA      | NA             |                                                 |
|                                     |                      | ACC GAMMA                                       | 2.2E4              | 2.0E6              | 1                  | 2         | AN + DATA      | YES            |                                                 |
| OP. CODE: A                         |                      | NORM BETA                                       | NA                 | -                  | 1                  |           | NA             | NA             |                                                 |
|                                     |                      | ACC BETA                                        | NA                 | -                  | 1                  |           | NA             | NA             |                                                 |
|                                     |                      | NEUTRON                                         | NA                 | -                  | 1                  |           | NA             | NA             |                                                 |
|                                     |                      | SPRAY                                           | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| ACCURACY - -                        |                      | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| SPEC: NA                            |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
| DEMO: NA                            |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.: ABN24033                  |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE: NA [R2]                |                      | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY: NA [R2]                      |                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
| EQUIPMENT NOT SUBJECT TO            |                      | CRITERIA, EQEDC-1, REV 3, DEC. 20, 1985 [R2]    |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
| SUBMERGENCE (OR) SPRAY              |                      | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | DESIGN/AVERAGE.                                 |
|                                     |                      | SDDF #-IEEE 01.420-5000B                        |                    |                    |                    |           |                |                |                                                 |
|                                     |                      | 3. EQUIPMENT OPERABILITY DATA SHEET:            |                    |                    |                    |           |                |                |                                                 |
|                                     |                      | FILE NO. VBS-1                                  |                    |                    |                    |           |                |                |                                                 |
| DOCUMENTATION ACCEPTABILITY:        |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
| ACCEPTABLE TO NUREG 0588,CAT I      |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                     |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                     |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
| MAINT/SURVEILL YES                  |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                        |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                     |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
| QUALIFIED LIFE - - -                |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
| (YEARS): 40                         |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                        |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                     |                      |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                     |                      | [R2] INDICATES CHANGES MADE IN THIS REVISION    |                    |                    |                    |           |                |                |                                                 |



QUAL REF #\_E014TAD\_ REV 2

14-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|---------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                 | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                 |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.: 2VBS*PNLA106         | OP.TIME:                                        | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN + DATA      | YES            |                                                 |
| SPEC NO.: E014T                 | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| SYSTEM: VBS-VITAL BUS SYSTEM    | NORMAL                                          | 104/88             | 104/95             | 1                  | 2         | AN + DATA      | NA             | NOTE 2                                          |
| (INCOMING SUPPLY FROM INVERTER) | ABNORMAL                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| TYPE: (DESCRIPTION)             | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| PANELBOARD 120/240 V CLASS      | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
|                                 | NORMAL                                          | -0.25              | ATMOS              | 1                  | 2         | AN + DATA      | NA             |                                                 |
| MANUFACTURER: BROWN BOVERI      | ABNORMAL                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
|                                 | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| MODEL NO.: SERIES 6 VB          | IRH (%):                                        | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
|                                 | NORMAL                                          | 50                 | 90                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| SAFETY FUNCTION: - - -          | ABNORMAL                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| SUPPLY POWER TO CLASS 1E        | ACCIDENT                                        | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |                                                 |
| COMPONENTS                      | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
|                                 | NORM GAMMA                                      | 1.8E3              | -                  | 1                  | 2         | AN + DATA      | NA             |                                                 |
|                                 | ACC GAMMA                                       | 2.2E4              | 2.0E6              | 1                  | 2         | AN + DATA      | YES            |                                                 |
| OP. CODE: A                     | NORM BETA                                       | NA                 | -                  | 1                  |           | NA             | NA             |                                                 |
|                                 | ACC BETA                                        | NA                 | -                  | 1                  |           | NA             | NA             |                                                 |
|                                 | NEUTRON                                         | NA                 | -                  | 1                  |           | NA             | NA             |                                                 |
|                                 | SPRAY                                           | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| ACCURACY - -                    | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| SPEC: NA                        |                                                 |                    |                    |                    |           |                |                |                                                 |
| DEMO: NA                        |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.: ABS24036              |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE: NA [R2]            | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY: NA [R2]                  | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
| EQUIPMENT NOT SUBJECT TO        | CRITERIA, EQEDC-1, REV 3, DEC. 20, 1985 [R2]    |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
| SUBMERGENCE (OR) SPRAY          | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | DESIGN/AVERAGE.                                 |
|                                 | SDDF # IEEE 01.420-5000B                        |                    |                    |                    |           |                |                |                                                 |
|                                 | 3. EQUIPMENT OPERABILITY DATA SHEET:            |                    |                    |                    |           |                |                |                                                 |
|                                 | FILE NO. VBS-1                                  |                    |                    |                    |           |                |                |                                                 |
| DOCUMENTATION ACCEPTABILITY:    |                                                 |                    |                    |                    |           |                |                |                                                 |
| ACCEPTABLE TO NUREG 0588,CAT 1  |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                 |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                 |                                                 |                    |                    |                    |           |                |                |                                                 |
| MAINT/SURVEILL YES              |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                    |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                 |                                                 |                    |                    |                    |           |                |                |                                                 |
| QUALIFIED LIFE - - -            |                                                 |                    |                    |                    |           |                |                |                                                 |
| (YEARS): 40                     |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                    |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                 |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION    |                    |                    |                    |           |                |                |                                                 |



14-Feb-86

QUAL REF # E014TAP REV 2

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION           | PARAMETER    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|---------------------------------|--------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 |              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2VBS*PNLB106         | OP.TIME:     | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN + DATA      | YES            |         |
| SPEC NO.: E014T                 | TEMP (F):    |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM: VBS-VITAL BUS SYSTEM    | NORMAL       | 104/88             | 104/95             | 1                  | 2         | AN + DATA      | NA             | NOTE 2  |
| (INCOMING SUPPLY FROM INVERTER) | ABNORMAL     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |         |
| TYPE: (DESCRIPTION)             | ACCIDENT     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |         |
| PANELBOARD 120/240 V CLASS      | PRESS (PSIG) |                    |                    |                    |           |                |                | NOTE 1  |
|                                 | NORMAL       | -0.25              | ATMOS              | 1                  | 2         | AN + DATA      | NA             |         |
|                                 | ABNORMAL     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |         |
| MANUFACTURER: BROWN BOVERI      | ACCIDENT     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |         |
| MODEL NO.: SERIES 6 VB          | RH (%):      |                    |                    |                    |           |                |                | NOTE 1  |
|                                 | NORMAL       | 50                 | 90                 | 1                  | 2         | AN + DATA      | NA             |         |
|                                 | ABNORMAL     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |         |
| SAFETY FUNCTION: - - -          | ACCIDENT     | NA                 | NA                 | 1                  | 2         | AN + DATA      | NA             |         |
| SUPPLY POWER TO CLASS 1E        | RADIATION:   |                    |                    |                    |           |                |                | NOTE 1  |
| COMPONENTS                      | NORM GAMMA   | 1.8E3              | -                  | 1                  | 2         | AN + DATA      | NA             |         |
|                                 | ACC GAMMA    | 2.2E4              | 2.0E6              | 1                  | 2         | AN + DATA      | YES            |         |
| OP. CODE: A                     | NORM BETA    | NA                 | -                  | 1                  |           | NA             | NA             |         |
|                                 | ACC BETA     | NA                 | -                  | 1                  |           | NA             | NA             |         |
|                                 | NEUTRON      | NA                 | -                  | 1                  |           | NA             | NA             |         |
|                                 | SPRAY        | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                    | SUBMERGENCE  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

SPEC: NA  
DEMO: NA

ZONE NO.: ABS24036  
SUBMERGENCE: NA [R2]  
SPRAY: NA [R2]  
EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE (OR) SPRAY

DOCUMENTATION ACCEPTABILITY:  
ACCEPTABLE TO NUREG 0588, CAT I

MAINT/SURVEILL YES  
REFERENCE: 2

QUALIFIED LIFE - - -  
(YEARS): 40  
REFERENCE: 2

DOCUMENT REFERENCE:

1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC. 20, 1985 [R2]
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 01.420-5000B
3. EQUIPMENT OPERABILITY DATA SHEET: FILE NO. VBS-1

- NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

[R2] INDICATES CHANGES MADE IN THIS REVISION





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       |             | PARAMETER                                                                                    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |                                                                                                                                                                                                                                                                                                                                                             | QUAL METHOD | MARGIN DEMO | REMARKS |
|-------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|---------|
| =====                                                       |             | =====                                                                                        | =====           | =====           | SPECIFIED          | QUALIFIED                                                                                                                                                                                                                                                                                                                                                   | =====       | =====       | =====   |
| EQUIP NO.:                                                  | 2EPS*SWG001 | OP.TIME:                                                                                     | 100 DAYS        | >100 DAYS       | 3                  | 2                                                                                                                                                                                                                                                                                                                                                           | AN+DATA     | YES         | NOTE 3  |
| SPEC NO.:                                                   | E015N       | TEMP (F):                                                                                    | - - - -         | - - - -         | - - - -            | - - - -                                                                                                                                                                                                                                                                                                                                                     | - - - -     | - - - -     | NOTE 1  |
| SYSTEM:                                                     |             | NORMAL                                                                                       | 104/89          | 104/95          | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | TEST-SIM    | NA          | NOTE 2  |
| EPS - SWGR, EMERGENCY, 13.8 KV                              |             | ABNORMAL                                                                                     | NA              | 48 HRS @126     | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)                                         |             | ACCIDENT                                                                                     | NA              | NA              | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | NA          | NA          |         |
| 15 KV, 1000 MVA METAL CLAD                                  |             | PRESS (PSIG)                                                                                 | - - - -         | - - - -         | - - - -            | - - - -                                                                                                                                                                                                                                                                                                                                                     | - - - -     | - - - -     | NOTE 1  |
| SWITCHGEAR                                                  |             | NORMAL                                                                                       | -0.25" WG       | ATMOS           | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | TEST-SIM    | NA          |         |
| MANUFACTURER: BROWN-BOVERI                                  |             | ABNORMAL                                                                                     | NA              | NA              | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | NA          | NA          |         |
| MODEL NO.:                                                  | HK-1000     | ACCIDENT                                                                                     | NA              | NA              | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | NA          | NA          |         |
| SAFETY FUNCTION: - - -                                      |             | RH (%):                                                                                      | - - - -         | - - - -         | - - - -            | - - - -                                                                                                                                                                                                                                                                                                                                                     | - - - -     | - - - -     | NOTE 1  |
| TRIPPING OF RCS PUMPS AND MVP                               |             | NORMAL                                                                                       | 50              | 90              | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | TEST-SIM    | NA          |         |
| PENETRATION PROTECTION                                      |             | ABNORMAL                                                                                     | NA              | NA              | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | NA          | NA          |         |
|                                                             |             | ACCIDENT                                                                                     | NA              | NA              | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | NA          | NA          |         |
| OP. CODE: A                                                 |             | RADIATION:                                                                                   | - - - -         | - - - -         | - - - -            | - - - -                                                                                                                                                                                                                                                                                                                                                     | - - - -     | - - - -     | NOTE 1  |
|                                                             |             | NORM GAMMA                                                                                   | 1.8E3           |                 | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | NA          | NA          |         |
|                                                             |             | ACC GAMMA                                                                                    | 2.2E4           | 1.0E5           | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | TEST-SIM    | YES         | NOTE 4  |
|                                                             |             | NORM BETA                                                                                    | NA              |                 | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | NA          | NA          |         |
|                                                             |             | ACC BETA                                                                                     | NA              |                 | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | NA          | NA          |         |
|                                                             |             | NEUTRON                                                                                      | NA              |                 | 1                  | 2                                                                                                                                                                                                                                                                                                                                                           | NA          | NA          |         |
|                                                             |             | SPRAY                                                                                        | NA              | NA              | NA                 | NA                                                                                                                                                                                                                                                                                                                                                          | NA          | NA          |         |
| ACCURACY - -                                                |             | SUBMERGENCE                                                                                  | NA              | NA              | NA                 | NA                                                                                                                                                                                                                                                                                                                                                          | NA          | NA          |         |
| SPEC: NA                                                    |             | =====                                                                                        |                 |                 |                    |                                                                                                                                                                                                                                                                                                                                                             |             |             |         |
| DEMO: NA                                                    |             | =====                                                                                        |                 |                 |                    |                                                                                                                                                                                                                                                                                                                                                             |             |             |         |
| ZONE NO.:                                                   | ABN24033    | DOCUMENT REFERENCE:                                                                          |                 |                 |                    | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                                                                                                                |             |             |         |
| SUBMERGENCE: NA [R2]                                        |             | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                 |                 |                    | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                                                                                                                      |             |             |         |
| SPRAY: NA [R2]                                              |             | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.330-50003C                       |                 |                 |                    | 3.BASED ON THE ARRHENIUS CURVES IN REF 2 ALL MATERIALS IN THE SWITCHGEAR SHOW QUALIFIED LIFE SUBSTANTIALLY LONGER THAN 40 YEARS + 100 DAYS AT AVERAGE TEMPERATURE OF 95F TO WHICH THE SWGR IS QUALIFIED BY VENDOR. SINCE NMP2 SWGR IS OPERATED AT 89F, RATHER THAN 95F, AS QUALIFIED, ADDITIONAL OPERATION TIME BEYOND 100 DAYS POST-ACCIDENT IS AVAILABLE. |             |             |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY             |             | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. EPS-1                                     |                 |                 |                    | 4.VENDOR TESTED VALUE INCLUDES COMBINED VALUE OF BOTH ACCIDENT AND NORMAL RADIATION VALUES.                                                                                                                                                                                                                                                                 |             |             |         |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |             |                                                                                              |                 |                 |                    |                                                                                                                                                                                                                                                                                                                                                             |             |             |         |
| MAINT/SURVEILL - - -                                        |             |                                                                                              |                 |                 |                    |                                                                                                                                                                                                                                                                                                                                                             |             |             |         |
| REFERENCE: 2                                                |             |                                                                                              |                 |                 |                    |                                                                                                                                                                                                                                                                                                                                                             |             |             |         |
| QUALIFIED LIFE - - -                                        |             |                                                                                              |                 |                 |                    |                                                                                                                                                                                                                                                                                                                                                             |             |             |         |
| (YEARS): 40                                                 |             |                                                                                              |                 |                 |                    |                                                                                                                                                                                                                                                                                                                                                             |             |             |         |
| REFERENCE: 2                                                |             |                                                                                              |                 |                 |                    |                                                                                                                                                                                                                                                                                                                                                             |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.               |             |                                                                                              |                 |                 |                    |                                                                                                                                                                                                                                                                                                                                                             |             |             |         |



14-Feb-86

QUAL REF #\_E01SNAB\_ REV 2

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          | PARAMETER   | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|--------------------------------|-------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                |             |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2EPS*SWG002         | OP.TIME:    | 100 DAYS        | >100 DAYS       | 3                  | 2         | AN+DATA     | YES         | NOTE 3  |
| SPEC NO.: E01SN                | TEMP (F):   |                 |                 |                    |           |             |             | NOTE 1  |
| SYSTEM:                        | NORMAL      | 104/89          | 104/95          | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
| EPS - SWGR, EMERGENCY, 13.8 KV | ABNORMAL    | NA              | 48 HRS @126     | 1                  | 2         | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)            | ACCIDENT    | NA              | NA              | 1                  | 2         | NA          | NA          | NOTE 1  |
| 15 KV, 1000 MVA METAL CLAD     | PRESS(PSIG) |                 |                 |                    |           |             |             |         |
| SWITCHGEAR                     | NORMAL      | -0.25" WG       | ATMOS           | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: BROWN-BOVERI     | ABNORMAL    | NA              | NA              | 1                  | 2         | NA          | NA          |         |
|                                | ACCIDENT    | NA              | NA              | 1                  | 2         | NA          | NA          | NOTE 1  |
| MODEL NO.: HK-1000             | RH (%)      |                 |                 |                    |           |             |             |         |
|                                | NORMAL      | 50              | 90              | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -         | ABNORMAL    | NA              | NA              | 1                  | 2         | NA          | NA          |         |
| TRIPPING OF RCS PUMPS AND MVP  | ACCIDENT    | NA              | NA              | 1                  | 2         | NA          | NA          | NOTE 1  |
| PENETRATION PROTECTION         | RADIATION:  |                 |                 |                    |           |             |             |         |
|                                | NORM GAMMA  | 1.8E3           |                 | 1                  | 2         | NA          | NA          |         |
| OP. CODE: A                    | ACC GAMMA   | 2.2E4           | 1.0E5           | 1                  | 2         | TEST-SIM    | YES         | NOTE 4  |
|                                | NORM BETA   | NA              |                 | 1                  | 2         | NA          | NA          |         |
|                                | ACC BETA    | NA              |                 | 1                  | 2         | NA          | NA          |         |
|                                | NEUTRON     | NA              |                 | 1                  | 2         | NA          | NA          |         |
|                                | SPRAY       | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ACCURACY - -                   | SUBMERGENCE | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: NA                       |             |                 |                 |                    |           |             |             |         |
| DEMO: NA                       |             |                 |                 |                    |           |             |             |         |
| ZONE NO.: ABN24033             |             |                 |                 |                    |           |             |             |         |
| SUBMERGENCE: NA [R2]           |             |                 |                 |                    |           |             |             |         |
| SPRAY: NA [R2]                 |             |                 |                 |                    |           |             |             |         |
| EQUIPMENT NOT SUBJECT TO       |             |                 |                 |                    |           |             |             |         |
| SUBMERGENCE (OR) SPRAY         |             |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:   |             |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I |             |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -           |             |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |             |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -           |             |                 |                 |                    |           |             |             |         |
| (YEARS): 40                    |             |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                   |             |                 |                 |                    |           |             |             |         |

DOCUMENT REFERENCE:

1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.330-50003C
3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. EPS-1

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
- 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
- 3.BASED ON THE ARRHENIUS CURVES IN REF 2 ALL MATERIALS IN THE SWITCHGEAR SHOW QUALIFIED LIFE SUBSTANTIALLY LONGER THAN 40 YEARS + 100 DAYS AT AVERAGE TEMPERATURE OF 95F TO WHICH THE SWGR IS QUALIFIED BY VENDOR. SINCE NMP2 SWGR IS OPERATED AT 89F, RATHER THAN 95F, AS QUALIFIED, ADDITIONAL OPERATION TIME BEYOND 100 DAYS POST-ACCIDENT IS AVAILABLE.
- 4.VENDOR TESTED VALUE INCLUDES COMBINED VALUE OF BOTH ACCIDENT AND NORMAL RADIATION VALUES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



QUAL REF # E015NAC REV 2

14-Feb-86

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2EPS*SWG003         | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.: E015N                | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM:                        | NORMAL                                     | 104/88             | 104/95             | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| EPS - SWGR, EMERGENCY, 13.8 KV | ABNORMAL                                   | NA                 | 48 HRS @126        | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)            | ACCIDENT                                   | NA                 | NA                 | 1                  | 2         | NA             | NA             |         |
| 15 KV, 1000 MVA METAL CLAD     | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
| SWITCHGEAR                     | NORMAL                                     | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: BROWN-BOVERI     | ABNORMAL                                   | NA                 | NA                 | 1                  | 2         | NA             | NA             |         |
|                                | ACCIDENT                                   | NA                 | NA                 | 1                  | 2         | NA             | NA             |         |
| MODEL NO.: HK-1000             | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                                | NORMAL                                     | 50                 | 90                 | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -         | ABNORMAL                                   | NA                 | NA                 | 1                  | 2         | NA             | NA             |         |
| TRIPPING OF RCS PUMPS AND MVP  | ACCIDENT                                   | NA                 | NA                 | 1                  | 2         | NA             | NA             |         |
| PENETRATION PROTECTION         | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                | NORM GAMMA                                 | 1.8E3              |                    | 1                  | 2         | NA             | NA             |         |
| OP. CODE: A                    | ACC GAMMA                                  | 2.2E4              | 1.0E5              | 1                  | 2         | TEST-SIM       | YES            | NOTE 4  |
|                                | NORM BETA                                  | NA                 |                    | 1                  | 2         | NA             | NA             |         |
|                                | ACC BETA                                   | NA                 |                    | 1                  | 2         | NA             | NA             |         |
|                                | NEUTRON                                    | NA                 |                    | 1                  | 2         | NA             | NA             |         |
|                                | SPRAY                                      | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCURACY - -                   | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: NA                       |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                       |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: ABS24036             |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA [R2]           |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: NA [R2]                 |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO       |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE (OR) SPRAY         |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                    |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.330-50003C
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. EPS-1

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.BASED ON THE ARRHENIUS CURVES IN REF 2 ALL MATERIALS IN THE SWITCHGEAR SHOW QUALIFIED LIFE SUBSTANTIALLY LONGER THAN 40 YEARS + 100 DAYS AT AVERAGE TEMPERATURE OF 95F TO WHICH THE SWGR IS QUALIFIED BY VENDOR. SINCE NMP2 SWGR IS OPERATED AT 89F, RATHER THAN 95F, AS QUALIFIED, ADDITIONAL OPERATION TIME BEYOND 100 DAYS POST-ACCIDENT IS AVAILABLE.  
4.VENDOR TESTED VALUE INCLUDES COMBINED VALUE OF BOTH ACCIDENT AND NORMAL RADIATION VALUES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



14-Feb-86

QUAL REF #\_E015NAD\_ REV 2

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          | PARAMETER   | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|--------------------------------|-------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |             |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2EPS*SWG004         | OP.TIME:    | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN+DATA        | YES            | NOTE 3  |
| SPEC NO.: E015N                | TEMP (F):   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                        | NORMAL      | 104/88             | 104/95             | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| EPS - SWGR, EMERGENCY, 13.8 KV | ABNORMAL    | NA                 | 48 HRS @126        | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)            | ACCIDENT    | NA                 | NA                 | 1                  | 2         | NA             | NA             |         |
| 15 KV, 1000 MVA METAL CLAD     | PRESS(PSIG) | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SWITCHGEAR                     | NORMAL      | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: BROWN-BOVERI     | ABNORMAL    | NA                 | NA                 | 1                  | 2         | NA             | NA             |         |
| MODEL NO.: HK-1000             | ACCIDENT    | NA                 | NA                 | 1                  | 2         | NA             | NA             |         |
| SAFETY FUNCTION: - - -         | RH (%):     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| TRIPPING OF RCS PUMPS AND MVP  | NORMAL      | 50                 | 90                 | 1                  | 2         | TEST-SIM       | NA             |         |
| PENETRATION PROTECTION         | ABNORMAL    | NA                 | NA                 | 1                  | 2         | NA             | NA             |         |
| OP. CODE: A                    | ACCIDENT    | NA                 | NA                 | 1                  | 2         | NA             | NA             |         |
| ACCURACY - -                   | RADIATION:  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SPEC: NA                       | NORM GAMMA  | 1.8E3              |                    | 1                  | 2         | NA             | NA             |         |
| DEMO: NA                       | ACC GAMMA   | 2.2E4              | 1.0E5              | 1                  | 2         | TEST-SIM       | YES            | NOTE 4  |
| ZONE NO.: ABS24036             | NORM BETA   | NA                 |                    | 1                  | 2         | NA             | NA             |         |
| SUBMERGENCE: NA [R2]           | ACC BETA    | NA                 |                    | 1                  | 2         | NA             | NA             |         |
| SPRAY: NA [R2]                 | NEUTRON     | NA                 |                    | 1                  | 2         | NA             | NA             |         |
| EQUIPMENT NOT SUBJECT TO       | SPRAY       | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SUBMERGENCE (OR) SPRAY         | SUBMERGENCE | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| DOCUMENTATION ACCEPTABILITY:   |             |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |             |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |             |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |             |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |             |                    |                    |                    |           |                |                |         |
| (YEARS): 40                    |             |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |             |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.330-50003C
3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. EPS-1

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.BASED ON THE ARRHENIUS CURVES IN REF 2 ALL MATERIALS IN THE SWITCHGEAR SHOW QUALIFIED LIFE SUBSTANTIALLY LONGER THAN 40 YEARS + 100 DAYS AT AVERAGE TEMPERATURE OF 95F TO WHICH THE SWGR IS QUALIFIED BY VENDOR. SINCE NMP2 SWGR IS OPERATED AT 89F, RATHER THAN 95F, AS QUALIFIED, ADDITIONAL OPERATION TIME BEYOND 100 DAYS POST-ACCIDENT IS AVAILABLE.  
4.VENDOR TESTED VALUE INCLUDES COMBINED VALUE OF BOTH ACCIDENT AND NORMAL RADIATION VALUES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





QUAL REF #\_E015QAA\_ REV 1

18-Feb-86

| EQUIPMENT DESCRIPTION                              |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION   |                    |                    |                    |           |                |                |             |
|----------------------------------------------------|-------------|----------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------|
|                                                    |             | PARAMETER                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS     |
|                                                    |             |                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |             |
| EQUIP NO.:                                         | 2DMS*MCCA1  | OP.TIME:                                     | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN + DATA      | YES            |             |
| SPEC NO.:                                          | E015Q       | TEMP (F):                                    |                    |                    |                    |           |                |                |             |
| SYSTEM:                                            | DMS - MOTOR | NORMAL                                       | 104/89             | 104/89             | 1                  | 2         | TEST-SIM       | NA             | NOTE 1      |
| CONTROL CENTER DC - SYSTEM                         |             | ABNORMAL                                     | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             | NOTE 2      |
| TYPE: (DESCRIPTION)                                |             | ACCIDENT                                     | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| DC COMBINATION STARTER MCC                         |             | PRESS(PSIG)                                  |                    |                    |                    |           |                |                | NOTE 1      |
|                                                    |             | NORMAL                                       | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                    |             | ABNORMAL                                     | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| MANUFACTURER: GOULD                                |             | ACCIDENT                                     | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| MODEL NO.:                                         | 5600-SERIES | RH (%)                                       |                    |                    |                    |           |                |                | NOTE 1      |
|                                                    |             | NORMAL                                       | 50                 | 100 [R1]           | 1                  | 2         | TEST-SIM       | NA             | NOTE 5 [R1] |
|                                                    |             | ABNORMAL                                     | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| SAFETY FUNCTION: - - -                             |             | ACCIDENT                                     | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| SUPPLY POWER TO CLASS 1E LOADS<br>WHEN REQUIRED    |             | RADIATION:                                   |                    |                    |                    |           |                |                | NOTE 1      |
|                                                    |             | NORM GAMMA                                   | 1.8E3              | 1.0E6              | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                    |             | ACC GAMMA                                    | 2.2E4              |                    | 1                  | 2         | TEST-SIM       | YES            |             |
| OP. CODE: A                                        |             | NORM BETA                                    | NA                 | NA                 | 1                  | 2         |                | NA             |             |
|                                                    |             | ACC BETA                                     | NA                 | NA                 | 1                  | 2         |                | NA             |             |
|                                                    |             | NEUTRON                                      | NA                 | NA                 | 1                  | 2         |                | NA             |             |
|                                                    |             | SPRAY                                        | NA                 |                    |                    |           |                | NA             |             |
| ACCURACY - -                                       |             | SUBMERGENCE                                  | NA                 |                    |                    |           |                | NA             |             |
| SPEC: NA                                           |             |                                              |                    |                    |                    |           |                |                |             |
| DEMO: NA                                           |             |                                              |                    |                    |                    |           |                |                |             |
| ZONE NO.:                                          | ABN24033    |                                              |                    |                    |                    |           |                |                |             |
| SUBMERGENCE:                                       | NA          |                                              |                    |                    |                    |           |                |                |             |
| SPRAY:                                             | NA          |                                              |                    |                    |                    |           |                |                |             |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE (OR) SPRAY |             |                                              |                    |                    |                    |           |                |                |             |
| DOCUMENTATION ACCEPTABILITY:                       |             |                                              |                    |                    |                    |           |                |                |             |
| ACCEPTABLE TO NUREG 0588,CAT I                     |             |                                              |                    |                    |                    |           |                |                |             |
| MAINT/SURVEILL - - -                               |             |                                              |                    |                    |                    |           |                |                |             |
| REFERENCE: 2                                       |             |                                              |                    |                    |                    |           |                |                |             |
| QUALIFIED LIFE - - -                               |             |                                              |                    |                    |                    |           |                |                |             |
| (YEARS):37.9 (NOTE 4)[R1]                          |             |                                              |                    |                    |                    |           |                |                |             |
| REFERENCE: 2                                       |             |                                              |                    |                    |                    |           |                |                |             |
|                                                    |             | [R1] INDICATES CHANGES MADE IN THIS REVISION |                    |                    |                    |           |                |                |             |

**DOCUMENT REFERENCE:**

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC. 20, 1985; [R1]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 01.340-5000D
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. DMS-1

**NOTES:** 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3.NOTE DELETED [R1]  
4.EQUIPMENT IS QUALIFIED BY VENDOR FOR 40 YEAR LIFE BASED ON LONG TERM AVERAGE AMBIENT TEMP OF 30C (86F). FROM REFERENCE 1, THE FOLLOWING ENVIRONMENTAL PROFILE IS APPLICABLE: 85F FOR 144 MONTHS,89F FOR 280 MONTHS AND 58F FOR 56 MONTHS. WITH PHENOLIC AS A WEAK LINK MATERIAL (E=1.357eV) AND THE ABOVE PROFILE, THE ARRHENIUS EQUATION YIELDS 37.9 YEARS LIFE. [R1]  
5.NON-CONDENSING ENVIRONMENT. [R1]



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                           |             | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                           |                    |                    |                    |           |                |                |             |
|-----------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------|
|                                                                 |             | PARAMETER                                                                                                                                                                                                                                                                                                                                                            | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS     |
|                                                                 |             |                                                                                                                                                                                                                                                                                                                                                                      |                    |                    | SPECIFIED          | QUALIFIED |                |                |             |
| EQUIP NO.:                                                      | 2DMS*MCCB1  | OP.TIME:                                                                                                                                                                                                                                                                                                                                                             | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN + DATA      | YES            |             |
| SPEC NO.:                                                       | E015Q       | TEMP (F):                                                                                                                                                                                                                                                                                                                                                            | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1      |
| SYSTEM:                                                         | DMS - MOTOR | NORMAL                                                                                                                                                                                                                                                                                                                                                               | 104/88             | 104/88             | 1                  | 2         | TEST-SIM       | NA             | NOTE 2      |
| CONTROL CENTER DC - SYSTEM                                      |             | ABNORMAL                                                                                                                                                                                                                                                                                                                                                             | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| TYPE: (DESCRIPTION)                                             |             | ACCIDENT                                                                                                                                                                                                                                                                                                                                                             | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| DC COMBINATION STARTER MCC                                      |             | PRESS (PSIG)                                                                                                                                                                                                                                                                                                                                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1      |
|                                                                 |             | NORMAL                                                                                                                                                                                                                                                                                                                                                               | -0.25"WG           | ATMOS              | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                                 |             | ABNORMAL                                                                                                                                                                                                                                                                                                                                                             | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| MANUFACTURER: GOULD                                             |             | ACCIDENT                                                                                                                                                                                                                                                                                                                                                             | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                                 |             | RH (%):                                                                                                                                                                                                                                                                                                                                                              | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1      |
| MODEL NO.:                                                      | 5600-SERIES | NORMAL                                                                                                                                                                                                                                                                                                                                                               | 50                 | 90 [R1]            | 1                  | 2         | TEST-SIM       | NA             | NOTE 5 [R1] |
|                                                                 |             | ABNORMAL                                                                                                                                                                                                                                                                                                                                                             | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| SAFETY FUNCTION: - - -                                          |             | ACCIDENT                                                                                                                                                                                                                                                                                                                                                             | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| SUPPLY POWER TO CLASS 1E LOADS<br>WHEN REQUIRED                 |             | RADIATION:                                                                                                                                                                                                                                                                                                                                                           | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1      |
|                                                                 |             | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                           | 1.8E3              | 1.0E6              | 1                  | 2         | TEST-SIM       | NA             |             |
|                                                                 |             | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                            | 2.2E4              |                    | 1                  | 2         | TEST-SIM       | YES            |             |
| OP. CODE: A                                                     |             | NORM BETA                                                                                                                                                                                                                                                                                                                                                            | NA                 | NA                 | 1                  | 2         |                | NA             |             |
|                                                                 |             | ACC BETA                                                                                                                                                                                                                                                                                                                                                             | NA                 | NA                 | 1                  | 2         |                | NA             |             |
|                                                                 |             | NEUTRON                                                                                                                                                                                                                                                                                                                                                              | NA                 | NA                 | 1                  | 2         |                | NA             |             |
|                                                                 |             | SPRAY                                                                                                                                                                                                                                                                                                                                                                | NA                 |                    |                    |           |                | NA             |             |
| ACCURACY - -                                                    |             | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                          | NA                 |                    |                    |           |                | NA             |             |
| SPEC: NA                                                        |             |                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |             |
| DEMO: NA                                                        |             |                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |             |
| ZONE NO.:                                                       | ABS24036    |                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |             |
| SUBMERGENCE:                                                    | NA          |                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |             |
| SPRAY:                                                          | NA          |                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |             |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE (OR) SPRAY              |             |                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |             |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588, CAT I |             |                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |             |
| MAINT/SURVEILL - - -<br>REFERENCE: 2                            |             |                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |             |
| QUALIFIED LIFE - - -<br>(YEARS): 40 (NOTE 4) [R1]               |             |                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |             |
| REFERENCE: 2                                                    |             |                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                    |           |                |                |             |
|                                                                 |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |             |
|                                                                 |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                                                                                                                               |                    |                    |                    |           |                |                |             |
|                                                                 |             | 3.NOTE DELETED [R1]                                                                                                                                                                                                                                                                                                                                                  |                    |                    |                    |           |                |                |             |
|                                                                 |             | 4.EQUIPMENT IS QUALIFIED BY VENDOR FOR 40 YEAR LIFE BASED ON LONG TERM AVERAGE AMBB TEMP OF 30C(86F). FROM REFERENCE 1, THE FOLLOWING ENVIRONMENTAL PROFILE IS APPLICABLE: 85F FOR 144 MONTHS,88F FOR 280 MONTHS AND 61F FOR 56 MONTHS. WITH PHENOLIC AS A WEAK LINK MATERIAL (E=1.357eV) AND THE ABOVE PROFILE, THE ARRHENIUS EQUATION YIELDS 40.5 YEARS LIFE. [R1] |                    |                    |                    |           |                |                |             |
|                                                                 |             | 5.NON-CONDENSING ENVIRONMENT. [R1]                                                                                                                                                                                                                                                                                                                                   |                    |                    |                    |           |                |                |             |
|                                                                 |             | [R1] INDICATES CHANGES MADE IN THIS REVISION                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |             |



19-Mar-86

QUAL REF #\_E015QAC REV 1

| EQUIPMENT DESCRIPTION                        |               | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |             |
|----------------------------------------------|---------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------|
|                                              |               | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS     |
|                                              |               |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |             |
| EQUIP NO.:                                   | 2EHS*MCC102   | OP.TIME:                                   | 100 DAYS           | >100 DAYS          | 3                  | 2         | AN + DATA      | YES            |             |
| SPEC NO.:                                    | E015Q         | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1      |
| SYSTEM:                                      | EHS - MOTOR   | NORMAL                                     | 104/89             | 104/89             | 1                  | 2         | TEST-SIM       | YES            | NOTE 2      |
| CONTROL CENTER                               | -EMERGENCY    | ABNORMAL                                   | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| SYSTEM                                       |               | ACCIDENT                                   | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| TYPE: (DESCRIPTION)                          |               | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1      |
| AC COMBINATION STARTER MCC                   |               | NORMAL                                     | -0.25" WG          | ATMOS              | 1                  | 2         | TEST-SIM       | YES            |             |
| MANUFACTURER:                                | GOULD         | ABNORMAL                                   | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
|                                              |               | ACCIDENT                                   | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| MODEL NO.:                                   | 5600-SERIES   | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1      |
|                                              |               | NORMAL                                     | 50                 | 90 [R1]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 5 [R1] |
|                                              |               | ABNORMAL                                   | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| SAFETY FUNCTION:                             | - - -         | ACCIDENT                                   | NA                 | NA                 | 1                  | 2         | TEST-SIM       | NA             |             |
| SUPPLY POWER TO CLASS 1E LOADS               |               | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1      |
| WHEN REQUIRED                                |               | NORM GAMMA                                 | 1.8E3              | 1.0E6              | 1                  | 2         | TEST-SIM       | YES            |             |
| OP. CODE:                                    | A             | ACC GAMMA                                  | 2.2E4              |                    | 1                  | 2         | TEST-SIM       | YES            |             |
|                                              |               | NORM BETA                                  | NA                 | NA                 | 1                  | 2         |                | NA             |             |
|                                              |               | ACC BETA                                   | NA                 | NA                 | 1                  | 2         |                | NA             |             |
|                                              |               | NEUTRON                                    | NA                 | NA                 | 1                  | 2         |                | NA             |             |
|                                              |               | SPRAY                                      | NA                 |                    |                    |           |                | NA             |             |
| ACCURACY - -                                 |               | SUBMERGENCE                                | NA                 |                    |                    |           |                | NA             |             |
| SPEC:                                        | NA            |                                            |                    |                    |                    |           |                |                |             |
| DEMO:                                        | NA            |                                            |                    |                    |                    |           |                |                |             |
| ZONE NO.:                                    | ABN24033      |                                            |                    |                    |                    |           |                |                |             |
| SUBMERGENCE:                                 | NA            |                                            |                    |                    |                    |           |                |                |             |
| SPRAY:                                       | NA            |                                            |                    |                    |                    |           |                |                |             |
| EQUIPMENT NOT SUBJECT TO                     |               |                                            |                    |                    |                    |           |                |                |             |
| SUBMERGENCE (OR) SPRAY                       |               |                                            |                    |                    |                    |           |                |                |             |
| DOCUMENTATION ACCEPTABILITY:                 |               |                                            |                    |                    |                    |           |                |                |             |
| ACCEPTABLE TO NUREG 0588, CAT I              |               |                                            |                    |                    |                    |           |                |                |             |
| MAINT/SURVEILL - - -                         |               |                                            |                    |                    |                    |           |                |                |             |
| REFERENCE:                                   | 2             |                                            |                    |                    |                    |           |                |                |             |
| QUALIFIED LIFE - - -                         |               |                                            |                    |                    |                    |           |                |                |             |
| (YEARS):                                     | 37.9 (NOTE 4) |                                            |                    |                    |                    |           |                |                |             |
|                                              | 10 (NOTE 3)   |                                            |                    |                    |                    |           |                |                |             |
| REFERENCE:                                   | 2             |                                            |                    |                    |                    |           |                |                |             |
| [R1] INDICATES CHANGES MADE IN THIS REVISION |               |                                            |                    |                    |                    |           |                |                |             |

DOCUMENT REFERENCE:

1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R1]
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 01.340-5000D
3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. EHS-1

- NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
3. CONTROL TRANSFORMER IS QUALIFIED FOR 10 YEARS, POTENTIAL TRANSFORMER FOR 17 YEARS.
4. EQUIPMENT IS QUALIFIED BY VENDOR FOR 40 YEAR LIFE BASED ON LONG TERM AVERAGE TEMP AMBIENT OF 30C(86F). FROM REFERENCE 1, THE FOLLOWING ENVIRONMENTAL PROFILE IS APPLICABLE: 85F FOR 144 MONTHS, 89F FOR 280 MONTHS AND 58F FOR 56 MONTHS. WITH PHENOLIC AS A WEAK LINK MATERIAL (E=1.357eV) AND THE ABOVE PROFILE, THE ARRHENIUS EQUATION YIELDS 37.9 YEARS LIFE. [R1]
5. NON-CONDENSING ENVIRONMENT. [R1]



19-Mar-86

QUAL REF # E015QAD REV 1

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                       | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |   |             |             |             |
|-------------------------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|---|-------------|-------------|-------------|
|                                                             | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |   | QUAL METHOD | MARGIN DEMO | REMARKS     |
| EQUIP NO.: 2EHS*MCC302                                      | OP.TIME:                                   | 100 DAYS        | >100 DAYS       | 3                  | 2 | AN + DATA   | YES         |             |
| SPEC NO.: E015Q                                             | TEMP (F):                                  |                 |                 |                    |   |             |             | NOTE 1      |
| SYSTEM: EHS - MOTOR                                         | NORMAL                                     | 104/88          | 104/88          | 1                  | 2 | TEST-SIM    | YES         | NOTE 2      |
| CONTROL CENTER -EMERGENCY                                   | ABNORMAL                                   | NA              | NA              | 1                  | 2 | TEST-SIM    | NA          |             |
| SYSTEM                                                      | ACCIDENT                                   | NA              | NA              | 1                  | 2 | TEST-SIM    | NA          |             |
| TYPE: (DESCRIPTION)                                         | PRESS (PSIG)                               |                 |                 |                    |   |             |             | NOTE 1      |
| AC COMBINATION STARTER MCC                                  | NORMAL                                     | -0.25" WG       | ATMOS           | 1                  | 2 | TEST-SIM    | YES         |             |
|                                                             | ABNORMAL                                   | NA              | NA              | 1                  | 2 | TEST-SIM    | NA          |             |
| MANUFACTURER: GOULD                                         | ACCIDENT                                   | NA              | NA              | 1                  | 2 | TEST-SIM    | NA          |             |
|                                                             | RH (%)                                     |                 |                 |                    |   |             |             | NOTE 1      |
| MODEL NO.: 5600-SERIES                                      | NORMAL                                     | 50              | 90 [R1]         | 1                  | 2 | TEST-SIM    | YES         | NOTE 5 [R1] |
|                                                             | ABNORMAL                                   | NA              | NA              | 1                  | 2 | TEST-SIM    | NA          |             |
| SAFETY FUNCTION: - - -                                      | ACCIDENT                                   | NA              | NA              | 1                  | 2 | TEST-SIM    | NA          |             |
| SUPPLY POWER TO CLASS 1E LOADS WHEN REQUIRED                | RADIATION:                                 |                 |                 |                    |   |             |             | NOTE 1      |
|                                                             | NORM GAMMA                                 | 1.8E3           | 1.0E6           | 1                  | 2 | TEST-SIM    | YES         |             |
|                                                             | ACC GAMMA                                  | 2.2E4           |                 | 1                  | 2 | TEST-SIM    | YES         |             |
| OP. CODE: A                                                 | NORM BETA                                  | NA              | NA              | 1                  | 2 |             | NA          |             |
|                                                             | ACC BETA                                   | NA              | NA              | 1                  | 2 |             | NA          |             |
|                                                             | NEUTRON                                    | NA              | NA              | 1                  | 2 |             | NA          |             |
|                                                             | SPRAY                                      | NA              |                 |                    |   |             | NA          |             |
| ACCURACY - -                                                | SUBMERGENCE                                | NA              |                 |                    |   |             | NA          |             |
| SPEC: NA                                                    |                                            |                 |                 |                    |   |             |             |             |
| DEMO: NA                                                    |                                            |                 |                 |                    |   |             |             |             |
| ZONE NO.: ABS24036                                          |                                            |                 |                 |                    |   |             |             |             |
| SUBMERGENCE: NA                                             |                                            |                 |                 |                    |   |             |             |             |
| SPRAY: NA                                                   |                                            |                 |                 |                    |   |             |             |             |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE (OR) SPRAY             |                                            |                 |                 |                    |   |             |             |             |
| DOCUMENTATION ACCEPTABILITY: ACCEPTABLE TO NUREG 0588,CAT I |                                            |                 |                 |                    |   |             |             |             |
| MAINT/SURVEILL - - -                                        |                                            |                 |                 |                    |   |             |             |             |
| REFERENCE: 2                                                |                                            |                 |                 |                    |   |             |             |             |
| QUALIFIED LIFE - - -                                        |                                            |                 |                 |                    |   |             |             |             |
| (YEARS): 40 (NOTE 4)                                        |                                            |                 |                 |                    |   |             |             |             |
| 10 (NOTE 3)                                                 |                                            |                 |                 |                    |   |             |             |             |
| REFERENCE: 2                                                |                                            |                 |                 |                    |   |             |             |             |

DOCUMENT REFERENCE:

1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV. 3, DEC. 20, 1985 [R1]
2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 01.340-5000D
3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. EHS-1

- NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
- 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
- 3.CONTROL TRANSFORMER IS QUALIFIED FOR 10 YEARS, POTENTIAL TRANSFORMER FOR 17 YEARS.
- 4.EQUIPMENT IS QUALIFIED BY VENDOR FOR 40 YEAR LIFE BASED ON LONG TERM AVERAGE AMBIENT TEMP OF 30C(86F). FROM REFERENCE 1, THE FOLLOWING ENVIRONMENTAL PROFILE IS APPLICABLE: 85F FOR 144 MONTHS,88F FOR 280 MONTHS AND 61F FOR 56 MONTHS. WITH PHENOLIC AS A WEAK LINK MATERIAL (E=1.357eV) AND THE ABOVE PROFILE, THE ARRHENIUS EQUATION YEILDS 40.5 YEARS LIFE. [R1]
- 5.NON-CONDENSING ENVIRONMENT. [R1]

[R1] INDICATES CHANGES MADE IN THIS REVISION





18-Feb-86

QUAL REF #\_E021PAA REV 2

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                                                 |
|---------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------------------------------------------------------------------------------|
|                                 | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                         |
|                                 |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                 |
| EQUIP NO.: 2CES*Z01E            | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                 |
| SPEC NO.: E021P                 | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                          |
| SYSTEM: CES-COMMON              | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                          |
| ELECTRICAL SYSTEM               | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
| TYPE: (DESCRIPTION)             | ACCIDENT                                        | 340                | 380 [R2]           | 1                  | 2         | TEST-SIM       | YES            |                                                                                 |
| COAX INSTR ELECTRICAL [R2]      | PRESS(PSIG)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                          |
| PENETRATION 300V                | NORMAL                                          | 10.5 TO 1.0        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
| MANUFACTURER: CONAX             | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
| MODEL NO.: 10001-03             | ACCIDENT                                        | 45                 | 69                 | 1                  | 2         | TEST-SIM       | YES            |                                                                                 |
| SAFETY FUNCTION: - - -          | RRH (%)                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                          |
| PROVIDE CONTINUITY OF           | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
| ELECTRICAL CIRCUITS AND         | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
| CONTAINMENT INTEGRITY           | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
| OP. CODE: A                     | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                          |
|                                 | NORM GAMMA                                      | 3.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
|                                 | ACC GAMMA                                       | 2.5E7              | 1.10E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                          |
|                                 | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
|                                 | ACC BETA                                        | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                          |
|                                 | NEUTRON                                         | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                 |
|                                 | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                 |
| ACCURACY - -                    | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                 |
| SPEC: NA                        |                                                 |                    |                    |                    |           |                |                |                                                                                 |
| DEMO: NA                        |                                                 |                    |                    |                    |           |                |                |                                                                                 |
| ZONE NO.: PC250621              |                                                 |                    |                    |                    |           |                |                |                                                                                 |
| SUBMERGENCE: NA                 | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED. |
| SPRAY: YES                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX<br>DESIGN/AVERAGE.                       |
|                                 | CRITERIA, EGEDC- REV 3, DEC 20, 1985. [R2]      |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION<br>SEE PAGE 2: SINCE IT EMPLOYS SAME          |
|                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | MATERIALS (EXCEPT VITON) IT IS                                                  |
|                                 | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                | QUALIFIED TO THE ENVIRONMENTAL                                                  |
|                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                | CONDITIONS AT THE INBOARD SIDE;                                                 |
|                                 | FILE NO. CES-2                                  |                    |                    |                    |           |                |                | QUALIFIED PARAMETERS FOR VITON                                                  |
| DOCUMENTATION ACCEPTABILITY:    | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2] |                    |                    |                    |           |                |                | SEALINGS ENVELOPE SPECIFIED CON-                                                |
| ACCEPTABLE TO NUREG 0588, CAT I | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                | DITIONS - SEE CONAX REPORT                                                      |
|                                 | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                | IPS-325.                                                                        |
|                                 | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                | 4.QUALIFIED 1.1E8 RADS COVERS GAMMA                                             |
|                                 | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                | AND NEUTRON DOSES; QUALIFIED                                                    |
| MAINT/SURVEILL - - -            |                                                 |                    |                    |                    |           |                |                | 9.4E8 RADS COVERS BETA DOSES.                                                   |
| REFERENCE: NA                   |                                                 |                    |                    |                    |           |                |                |                                                                                 |
| QUALIFIED LIFE - - -            |                                                 |                    |                    |                    |           |                |                |                                                                                 |
| (YEARS): 40                     |                                                 |                    |                    |                    |           |                |                |                                                                                 |
| REFERENCE: 2                    |                                                 |                    |                    |                    |           |                |                |                                                                                 |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                |                                                                                 |



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[R2] INDICATES CHANGES MADE IN THIS REVISION.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[illegible]









| EQUIPMENT DESCRIPTION          |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|--------------------------------|------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                |            | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                |            |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.:                     | 2CES-Z03E  |                                                 |                    |                    |                    |           |                |                |                                                 |
| SPEC NO.:                      | E021P      | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                 |
| SYSTEM:                        | CES-COMMON | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| ELECTRICAL SYSTEM              |            | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                          |
|                                |            | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| TYPE: (DESCRIPTION)            |            | ACCIDENT                                        | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| CONTROL ELECTRICAL [R2]        |            | PRESS(PSIG)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| PENETRATION 600V               |            | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |            | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| MANUFACTURER: CONAX            |            | ACCIDENT                                        | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                 |
|                                |            | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| MODEL NO.:                     | 10002-02   | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |            | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| SAFETY FUNCTION: - - -         |            | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| PROVIDE CONTINUITY OF          |            | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| ELECTRICAL CIRCUITS AND        |            | NORM GAMMA                                      | 3.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| CONTAINMENT INTEGRITY          |            | ACC GAMMA                                       | 2.5E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                          |
| OP. CODE: A                    |            | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |            | ACC BETA                                        | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                          |
|                                |            | NEUTRON                                         | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                 |
|                                |            | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                 |
| ACCURACY - -                   |            | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| SPEC: NA                       |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| DEMO: NA                       |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.:                      | PC250621   |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE:                   | NA         | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY:                         | YES        | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
|                                |            | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
|                                |            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | DESIGN/AVERAGE.                                 |
|                                |            | SDDF # IEEE IEEE 1.290-5000E (CONAX IPS-634)    |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION               |
|                                |            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                | SEE PAGE 2: SINCE IT EMPLOYS SAME               |
|                                |            | FILE NO. CES-2                                  |                    |                    |                    |           |                |                | MATERIALS (EXCEPT VITON) IT IS                  |
| DOCUMENTATION ACCEPTABILITY:   |            | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2] |                    |                    |                    |           |                |                | QUALIFIED TO THE ENVIRONMENTAL                  |
| ACCEPTABLE TO NUREG 0588,CAT I |            | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                | CONDITIONS AT THE INBOARD SIDE;                 |
|                                |            | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                | QUALIFIED PARAMETERS FOR VITON                  |
|                                |            | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                | SEALINGS ENVELOPE SPECIFIED CON-                |
|                                |            | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                | DITIONS - SEE CONAX REPORT                      |
|                                |            |                                                 |                    |                    |                    |           |                |                | IPS-325.                                        |
| MAINT/SURVEILL - - -           |            |                                                 |                    |                    |                    |           |                |                | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA           |
| REFERENCE: NA                  |            |                                                 |                    |                    |                    |           |                |                | AND NEUTRON DOSES; QUALIFIED                    |
|                                |            |                                                 |                    |                    |                    |           |                |                | 9.4E8 RADS COVERS BETA DOSES.                   |
| QUALIFIED LIFE - - -           |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| (YEARS): 40                    |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                   |            |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |            | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                |                                                 |



| EQUIPMENT DESCRIPTION    |                    | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------|--------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                          |                    | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
| EQUIP NO.:               |                    |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| SPEC NO.:                | 2CES-Z03E<br>E021P |                                            |                    |                    |                    |           |                |                |         |
|                          |                    | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
|                          |                    | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                          |                    | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                          |                    | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                          |                    | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |                    | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                          |                    | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |                    | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                          |                    | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                          |                    | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                          |                    | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |                    | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                          |                    | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                          |                    | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                          |                    | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                          |                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                |                    | SC240135                                   |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:             |                    |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                   |                    |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO |                    |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY     |                    |                                            |                    |                    |                    |           |                |                |         |

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.







QUAL REF #\_E021PAD\_ REV 2

19-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z04E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%) :                                   |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC240135  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|--------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS                                                                                                                                                                                                                                                                                       |
|                                |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                 |                                                                                                                                                                                                                                                                                               |
| EQUIP NO.: 2CES*Z05E           |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| SPEC NO.: E021P                | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES             |                                                                                                                                                                                                                                                                                               |
| SYSTEM: CES-COMMON             | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                                                                                                                                                                                                                                                                        |
| ELECTRICAL SYSTEM              | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA              | NOTE 2                                                                                                                                                                                                                                                                                        |
|                                | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
| TYPE: (DESCRIPTION)            | ACCIDENT                                        | 340                | 370                | 1                  | 2         | TEST-SIM       | YES             |                                                                                                                                                                                                                                                                                               |
| INSTRUMENT ELECTRICAL          | PRESS(PSIG)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                                                                                                                                                                                                                                                                        |
| PENETRATION 300V               | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
|                                | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
| MANUFACTURER: CONAX            | ACCIDENT                                        | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES             |                                                                                                                                                                                                                                                                                               |
|                                | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                                                                                                                                                                                                                                                                        |
| MODEL NO.: 10003-01            | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
|                                | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
| SAFETY FUNCTION: - - -         | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
| PROVIDE CONTINUITY OF          | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                                                                                                                                                                                                                                                                        |
| ELECTRICAL CIRCUITS AND        | NORM GAMMA                                      | 3.0E6              |                    | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
| CONTAINMENT INTEGRITY          | ACC GAMMA                                       | 2.5E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES             | NOTE 4                                                                                                                                                                                                                                                                                        |
| OP. CODE: A                    | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
|                                | ACC BETA                                        | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES             | NOTE 4                                                                                                                                                                                                                                                                                        |
|                                | NEUTRON                                         | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA              |                                                                                                                                                                                                                                                                                               |
|                                | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
| ACCURACY - -                   | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA              |                                                                                                                                                                                                                                                                                               |
| SPEC: NA                       |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| DEMO: NA                       |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| ZONE NO.: PC250621             |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| SUBMERGENCE: NA                |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| SPRAY: YES                     |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                 | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                                               |
|                                | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                 | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX<br>DESIGN/AVERAGE.                                                                                                                                                                                                                                     |
|                                | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                 | 3.FOR OUTBOARD SIDE QUALIFICATION<br>SEE PAGE 2: SINCE IT EMPLOYS SAME<br>MATERIALS (EXCEPT VITON) IT IS<br>QUALIFIED TO THE ENVIRONMENTAL<br>CONDITIONS AT THE INBOARD SIDE;<br>QUALIFIED PARAMETERS FOR VITON<br>SEALINGS ENVELOPE SPECIFIED CON-<br>DITIONS - SEE CONAX REPORT<br>IPS-325. |
|                                | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                 | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA<br>AND NEUTRON DOSES;QUALIFIED<br>9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                                         |
|                                | SDDF # IEEE 1.290-5000E (CONAX IPS-634)[R2]     |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | FILE CES-2                                      |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | 4. CALCULATION # 12177-EQS-19 (RADIATION) [R2]  |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| DOCUMENTATION ACCEPTABILITY:   |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| ACCEPTABLE TO NUREG 0588,CAT I |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| MAINT/SURVEILL - - -           |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| REFERENCE: NA                  |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| QUALIFIED LIFE - - -           |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| (YEARS): 40                    |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| REFERENCE: 2                   |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |



| EQUIPMENT DESCRIPTION    |                    | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------|--------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                          |                    | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
| EQUIP NO.:               |                    |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| SPEC NO.:                | 2CES*Z05E<br>E021P |                                            |                    |                    |                    |           |                |                |         |
|                          |                    | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
|                          |                    | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                          |                    | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                          |                    | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |                    | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                          |                    | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |                    | IRH (%):                                   |                    |                    |                    |           |                |                | NOTE 1  |
|                          |                    | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                          |                    | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                          |                    | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |                    | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                          |                    | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                          |                    | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                          |                    | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                          |                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                |                    | SC240135                                   |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:             |                    |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                   |                    |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO |                    |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY     |                    |                                            |                    |                    |                    |           |                |                |         |

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



[illegible]



QUAL REF #\_E021PAF\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION                                          |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|----------------------------------------------------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                     | 2CES*Z06E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:                                                      | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                                                |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                                |           | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                                |           | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                                                                |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                                |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                                                |           | ACC BETA                                   | 16.1E6 [R2]        |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             |                |         |
|                                                                |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                                                                |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                                                      |           | SC240135                                   |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                                   |           |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                                         |           |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY               |           |                                            |                    |                    |                    |           |                |                |         |
| <p>NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES<br/>AND NOTES.</p> |           |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.                  |           |                                            |                    |                    |                    |           |                |                |         |









QUAL REF #\_E021PAG\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION                            |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                  |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                  |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                       | 2CES*Z07E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:                                        | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                                                  |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                  |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                                  |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                  |           | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                  |           | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                                                  |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                  |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                                  |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                  |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                                  |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                                                  |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                                        | SC240135  |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                     |           |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                           |           |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT<br>TO SUBMERGENCE OR SPRAY |           |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.    |           |                                            |                    |                    |                    |           |                |                |         |

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.



| EQUIPMENT DESCRIPTION                         |               | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                 |         |
|-----------------------------------------------|---------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|---------|
|                                               |               | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS |
|                                               |               |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                 |         |
| EQUIP NO.:                                    | 2CES*Z08E     |                                            |                    |                    |                    |           |                |                 |         |
| SPEC NO.:                                     | E021P         |                                            |                    |                    |                    |           |                |                 |         |
| SYSTEM:                                       | CES-COMMON    |                                            |                    |                    |                    |           |                |                 |         |
| ELECTRICAL SYSTEM                             |               | NORMAL                                     | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA              | NOTE 2  |
|                                               |               | ABNORMAL                                   | 190                | 248                | 1                  | 2         | TEST-SIM       | NA              |         |
| TYPE: (DESCRIPTION)                           |               | ACCIDENT                                   | 340                | 370                | 1                  | 2         | TEST-SIM       | YES             |         |
| CONTROL ELECTRICAL                            |               | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| PENETRATION 600V                              |               | NORMAL                                     | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA              |         |
|                                               |               | ABNORMAL                                   | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA              |         |
| MANUFACTURER: CONAX                           |               | ACCIDENT                                   | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES             |         |
|                                               |               | RH (%) :                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| MODEL NO.:                                    | 10004-02 [R2] | NORMAL                                     | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA              |         |
|                                               |               | ABNORMAL                                   | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA              |         |
| SAFETY FUNCTION: - - -                        |               | ACCIDENT                                   | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA              |         |
| PROVIDE CONTINUITY OF-                        |               | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1  |
| ELECTRICAL CIRCUITS AND                       |               | NORM GAMMA                                 | 2.8E6              |                    | 1                  | 2         | TEST-SIM       | NA              |         |
| CONTAINMENT INTEGRITY                         |               | ACC GAMMA                                  | 3.1E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES             | NOTE 4  |
| OP. CODE: A                                   |               | NORM BETA                                  | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA              |         |
|                                               |               | ACC BETA                                   | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES             | NOTE 4  |
|                                               |               | NEUTRON                                    | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA              |         |
|                                               |               | SPRAY                                      | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA              |         |
| ACCURACY - -                                  |               | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA              |         |
| SPEC: NA                                      |               |                                            |                    |                    |                    |           |                |                 |         |
| DEMO: NA                                      |               |                                            |                    |                    |                    |           |                |                 |         |
| ZONE NO.:                                     | PC240603      |                                            |                    |                    |                    |           |                |                 |         |
| SUBMERGENCE:                                  | NA            |                                            |                    |                    |                    |           |                |                 |         |
| SPRAY:                                        | YES           |                                            |                    |                    |                    |           |                |                 |         |
| DOCUMENTATION ACCEPTABILITY:                  |               |                                            |                    |                    |                    |           |                |                 |         |
| ACCEPTABLE TO NUREG 0588,CAT I                |               |                                            |                    |                    |                    |           |                |                 |         |
|                                               |               |                                            |                    |                    |                    |           |                |                 |         |
| MAINT/SURVEILL - - -                          |               |                                            |                    |                    |                    |           |                |                 |         |
| REFERENCE: NA                                 |               |                                            |                    |                    |                    |           |                |                 |         |
| QUALIFIED LIFE - - -                          |               |                                            |                    |                    |                    |           |                |                 |         |
| (YEARS): 40                                   |               |                                            |                    |                    |                    |           |                |                 |         |
| REFERENCE: 2                                  |               |                                            |                    |                    |                    |           |                |                 |         |
|                                               |               |                                            |                    |                    |                    |           |                |                 |         |
|                                               |               |                                            |                    |                    |                    |           |                |                 |         |
|                                               |               |                                            |                    |                    |                    |           |                |                 |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |               |                                            |                    |                    |                    |           |                |                 |         |

**NOTES:**

- FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.
- NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.
- FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325.
- QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.



QUAL REF #\_E021PAH\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES*Z08E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        |                | NA             |         |

ZONE NO.: SC240135

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CES*Z09E           |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.: E021P                | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SYSTEM: CES-COMMON             | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| ELECTRICAL SYSTEM              | NORMAL                                     | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                | ABNORMAL                                   | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)            | ACCIDENT                                   | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |         |
| LVP ELECTRICAL                 | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| PENETRATION 600V               | NORMAL                                     | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                                | ABNORMAL                                   | 1                  | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: CONAX            | ACCIDENT                                   | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| MODEL NO.: 10005-01            | NORMAL                                     | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                | ABNORMAL                                   | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -         | ACCIDENT                                   | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| PROVIDE CONTINUITY OF          | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| ELECTRICAL CIRCUITS AND        | NORM GAMMA                                 | 3.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
| CONTAINMENT INTEGRITY          | ACC GAMMA                                  | 2.5E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4  |
| OP. CODE: A                    | NORM BETA                                  | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                | ACC BETA                                   | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4  |
|                                | NEUTRON                                    | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
|                                | SPRAY                                      | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
| ACCURACY - -                   | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: NA                       |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                       |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: PC250621             |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: YES                     |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: NA                  |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                    |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                                            |                    |                    |                    |           |                |                |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS IED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CON-DITIONS - SEE CONAX REPORT IPS-325.  
 4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.



18-Feb-86

QUAL REF #\_E021PAI\_\_\_\_ REV 2

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES*Z09E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN+DATA        | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC240135  
SUBMERGENCE:  
SPRAY:

NOTE: 1. SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CES*Z10E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.: E021P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: CES-COMMON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NORMAL                                     | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| ELECTRICAL SYSTEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ABNORMAL                                   | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ACCIDENT                                   | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |         |
| CONTROL ELECTRICAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| PENETRATION 600V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | NORMAL                                     | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: CONAX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ABNORMAL                                   | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
| MODEL NO.: 10004-04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ACCIDENT                                   | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
| SAFETY FUNCTION: - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| PROVIDE CONTINUITY OF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NORMAL                                     | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
| ELECTRICAL CIRCUITS AND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ABNORMAL                                   | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
| CONTAINMENT INTEGRITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ACCIDENT                                   | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| OP. CODE: A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NORM GAMMA                                 | 2.8E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ACC GAMMA                                  | 3.1E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NORM BETA                                  | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ACC BETA                                   | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NEUTRON                                    | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SPRAY                                      | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
| ACCURACY - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: PC240603                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: YES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0580, CAT I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                            |                    |                    |                    |           |                |                |         |
| <div style="display: flex; justify-content: space-between;"> <div> <p>[R2] INDICATES CHANGES MADE IN THIS REVISION.</p> </div> <div> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.<br/>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.<br/>3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325.<br/>4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.</p> </div> </div> |                                            |                    |                    |                    |           |                |                |         |



QUAL REF #\_E021PAJ\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO. :           | 2CES*Z10E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO. :            | E021P     | TEMP (F):                                  | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      |         |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS (PSIG)                               | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                       |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC240135  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.









QUAL REF #\_E021PAK\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES*Z11E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 175                | 380 [R2]           | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 69                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.3E7              | 1.10E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6 [R2]         |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA[R1]         |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | NA                 | 7 [R2]    | TEST-SIM       | NA             | NOTE 3  |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC240135

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE AND SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



QUAL REF # E021PAL REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION           |  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|--|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 |  | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |  |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CES*Z12E            |  | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.: E021P                 |  | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
| SYSTEM: CES-COMMON              |  | NORMAL                                     | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
| ELECTRICAL SYSTEM               |  | ABNORMAL                                   | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| TYPE: (DESCRIPTION)             |  | ACCIDENT                                   | 340                | 380 [R2]           | 1                  | 2         | TEST-SIM       | YES            |         |
| COAX INSTR ELECTRICAL [R2]      |  | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
| PENETRATION 300V                |  | NORMAL                                     | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: CONAX             |  | ABNORMAL                                   | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
| MODEL NO.: 10001-01             |  | ACCIDENT                                   | 45                 | 69                 | 1                  | 2         | TEST-SIM       | YES            |         |
| SAFETY FUNCTION: - - -          |  | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
| PROVIDE CONTINUITY OF           |  | NORMAL                                     | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
| ELECTRICAL CIRCUITS AND         |  | ABNORMAL                                   | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
| CONTAINMENT INTEGRITY           |  | ACCIDENT                                   | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| OP. CODE: A                     |  | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
| ACCURACY - -                    |  | NORM GAMMA                                 | 1.6E7              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
| SPEC: NA                        |  | ACC GAMMA                                  | 3.5E7              | 1.10E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 4  |
| DEMO: NA                        |  | NORM BETA                                  | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
| ZONE NO.: PC240607              |  | ACC BETA                                   | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4  |
| SUBMERGENCE: NA                 |  | NEUTRON                                    | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
| SPRAY: YES                      |  | SPRAY                                      | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
| DOCUMENTATION ACCEPTABILITY:    |  | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCEPTABLE TO NUREG 0588, CAT I |  |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: NA                   |  |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |  |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                     |  |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |  |                                            |                    |                    |                    |           |                |                |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3. FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325.  
4. QUALIFIED 1.1E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.



QUAL REF #\_E021PAL\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES*Z12E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | TEST-SIM       | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 175                | 380 [R2]           | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 69                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.3E7              | 1.10E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6 [R2]         |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | NA                 | 7 [R2]    | TEST-SIM       | NA             | NOTE 3  |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC240135

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECTED TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





18-Feb-86

QUAL REF #\_E021PAM\_\_\_\_ REV 2

| EQUIPMENT DESCRIPTION                         |  | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                    |                    |           |                |                |         |
|-----------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                               |  | PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                               |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CES-Z13E                          |  | OP.TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            | /       |
| SPEC NO.: E021P                               |  | TEMP (F):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM: CES-COMMON                            |  | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| ELECTRICAL SYSTEM                             |  | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                           |  | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |         |
| CONTROL ELECTRICAL [R2]                       |  | PRESS (PSIG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| PENETRATION 600V                              |  | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10.5 TO 1.0        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: CONAX                           |  | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
| MODEL NO.: 10002-01                           |  | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
| SAFETY FUNCTION: - - -                        |  | RH (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| PROVIDE CONTINUITY OF                         |  | NORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
| ELECTRICAL CIRCUITS AND                       |  | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
| CONTAINMENT INTEGRITY                         |  | ACCIDENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| IOP. CODE: A                                  |  | RADIATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| ACCURACY - -                                  |  | NORM GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3.3E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
| SPEC: NA                                      |  | ACC GAMMA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2.5E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4  |
| DEMO: NA                                      |  | NORM BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
| ZONE NO.: PC250625                            |  | ACC BETA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4  |
| SUBMERGENCE: NA                               |  | NEUTRON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
| SPRAY: YES                                    |  | SPRAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
| DOCUMENTATION ACCEPTABILITY:                  |  | SUBMERGENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ACCEPTABLE TO NUREG 0588, CAT I               |  | <p>DOCUMENT REFERENCE:</p> <ol style="list-style-type: none"> <li>EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]</li> <li>VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]</li> <li>EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2</li> <li>CALCULATION # 12177-EQS-019 (RADIATION) [R2]</li> <li>CALCULATION # 12177-EQS-64 (OPER EXT) [R2]</li> <li>VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) R2]</li> <li>VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]</li> </ol> <p>NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.<br/>2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.<br/>3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325.<br/>4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.</p> |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
| REFERENCE: NA                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                    |                    |           |                |                |         |



| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z13E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%) :                                   |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC240135  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|--------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.: 2CES-Z14E           |                                                 |                    |                    |                    |           |                |                |                                                 |
| SPEC NO.: E021P                | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                 |
| SYSTEM: CES-COMMON             | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| ELECTRICAL SYSTEM              | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                          |
|                                | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| TYPE: (DESCRIPTION)            | ACCIDENT                                        | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| CONTROL ELECTRICAL [R2]        | PRESS(PSIG)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| PENETRATION 600V               | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| MANUFACTURER: CONAX            | ACCIDENT                                        | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                 |
|                                | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| MODEL NO.: 10002-01            | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| SAFETY FUNCTION: - - -         | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| PROVIDE CONTINUITY OF          | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| ELECTRICAL CIRCUITS AND        | NORM GAMMA                                      | 1.6E7              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| CONTAINMENT INTEGRITY          | ACC GAMMA                                       | 3.5E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                          |
| OP. CODE: A                    | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                | ACC BETA                                        | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                          |
|                                | NEUTRON                                         | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                 |
|                                | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                 |
| ACCURACY - -                   | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| SPEC: NA                       |                                                 |                    |                    |                    |           |                |                |                                                 |
| DEMO: NA                       |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.: PC240607             |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE: NA                | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY: YES                     | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
|                                | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
|                                | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | DESIGN/AVERAGE.                                 |
|                                | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION               |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                | SEE PAGE 2: SINCE IT EMPLOYS SAME               |
|                                | FILE NO. CES-2                                  |                    |                    |                    |           |                |                | MATERIALS (EXCEPT VITON) IT IS                  |
| DOCUMENTATION ACCEPTABILITY:   | 4. CALCULATION # 12177-EQS-19 (RADIATION) [R2]  |                    |                    |                    |           |                |                | QUALIFIED TO THE ENVIRONMENTAL                  |
| ACCEPTABLE TO NUREG 0588,CAT I | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                | CONDITIONS AT THE INBOARD SIDE;                 |
|                                | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                | QUALIFIED PARAMETERS FOR VITON                  |
|                                | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                | SEALINGS ENVELOPE SPECIFIED CON-                |
|                                | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                | DITIONS - SEE CONAX REPORT                      |
|                                |                                                 |                    |                    |                    |           |                |                | IPS-325.                                        |
| MAINT/SURVEILL - - -           |                                                 |                    |                    |                    |           |                |                | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA           |
| REFERENCE: NA                  |                                                 |                    |                    |                    |           |                |                | AND NEUTRON DOSES; QUALIFIED                    |
|                                |                                                 |                    |                    |                    |           |                |                | 9.4E8 RADS COVERS BETA DOSES.                   |
| QUALIFIED LIFE - - -           |                                                 |                    |                    |                    |           |                |                |                                                 |
| (YEARS): 40                    |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                   |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                |                                                 |



QUAL REF #\_E021PAN\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|-----------------------|-----------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                       |           |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:            | 2CES-Z14E | OP. TIME:                                  | 100 DAYS        | 100 DAYS        | 3                  | 2,5 [R2]  | AN + DATA   | YES         |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     |         |
|                       |           | NORMAL                                     | 104/88          | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
|                       |           | ABNORMAL                                   | 94              | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                       |           | ACCIDENT                                   | 175             | 370             | 1                  | 2         | TEST-SIM    | YES         | NOTE 3  |
|                       |           | PRESS (PSIG)                               | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG     | 1.0 [R2]        | 1                  | 2         | TEST-SIM    | NA          |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG     | 62              | 1                  | 2         | TEST-SIM    | NA          |         |
|                       |           | ACCIDENT                                   | 2.8             | 72 [R2]         | 1                  | 2         | TEST-SIM    | YES         | NOTE 3  |
|                       |           | RH (%):                                    | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                       |           | NORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
|                       |           | ABNORMAL                                   | 50              | 95 [R2]         | 1                  | 2         | TEST-SIM    | NA          |         |
|                       |           | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          | NOTE 3  |
|                       |           | RADIATION:                                 | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                       |           | NORM GAMMA                                 | 5.1E5           |                 | 1                  | 2         | TEST-SIM    | NA          |         |
|                       |           | ACC GAMMA                                  | 5.3E7           | 1.285E8         | 1                  | 2         | TEST-SIM    | YES         | NOTE 3  |
|                       |           | NORM BETA                                  | NA              |                 | 1                  | NA        | NA          | NA          |         |
|                       |           | ACC BETA                                   | 6.1E6           |                 | 1                  | 2         | TEST-SIM    | YES         |         |
|                       |           | NEUTRON                                    | NA              |                 | 1                  | NA        | NA          | NA          |         |
|                       |           | SPRAY                                      | NA              | YES [R2]        | 1                  | 7 [R2]    | TEST-SIM    | NA          |         |
|                       |           | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |

ZONE NO.: SC240135

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[R2] INDICATES CHANGES MADE IN THIS REVISION.







## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION          | PARAMETER                                                                                    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                                             |
|--------------------------------|----------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                |                                                                                              |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                                                     |
| EQUIP NO.: 2CES-Z16E           | OP.TIME:                                                                                     | 100 DAYS        | 100 DAYS        | 3                  | 2,5 [R2]  | AN + DATA   | YES         |                                                                                                                                                                                                                                                                     |
| SPEC NO.: E021P                | TEMP (F):                                                                                    | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                                              |
| SYSTEM: CES-COMMON             | NORMAL                                                                                       | 150/135         | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2                                                                                                                                                                                                                                                              |
| ELECTRICAL SYSTEM              | ABNORMAL                                                                                     | 190             | 248             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
|                                | ACCIDENT                                                                                     | 340             | 370             | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                     |
| TYPE: (DESCRIPTION)            | PRESS(PSIG)                                                                                  | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                                              |
| CONTROL ELECTRICAL [R2]        | NORMAL                                                                                       | 0.5 TO 1.0      | 1.0 [R2]        | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| PENETRATION 600V               | ABNORMAL                                                                                     | 1.95            | 62              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| MANUFACTURER: CONAX            | ACCIDENT                                                                                     | 45              | 72 [R2]         | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                     |
| MODEL NO.: 10002-01            | RH (%):                                                                                      | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                                              |
|                                | NORMAL                                                                                       | 90              | 95              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
|                                | ABNORMAL                                                                                     | 90              | 95 [R2]         | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| SAFETY FUNCTION: - - -         | ACCIDENT                                                                                     | STEAM           | STEAM           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| PROVIDE CONTINUITY OF          | RADIATION:                                                                                   | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                                              |
| ELECTRICAL CIRCUITS AND        | NORM GAMMA                                                                                   | 2.3E6           |                 | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| CONTAINMENT INTEGRITY          | ACC GAMMA                                                                                    | 3.1E7           | 1.285E8         | 1                  | 2         | TEST-SIM    | YES         | NOTE 4                                                                                                                                                                                                                                                              |
| OP. CODE: A                    | NORM BETA                                                                                    | 6.8E5           |                 | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
|                                | ACC BETA                                                                                     | 6.3E8           | 9.4E8 [R2]      | 1                  | 2,6 [R2]  | TEST-SIM    | YES         | NOTE 4                                                                                                                                                                                                                                                              |
|                                | NEUTRON                                                                                      | 4.2E12          |                 | 1                  | 2,4 [R2]  | AN + DATA   | NA          |                                                                                                                                                                                                                                                                     |
|                                | SPRAY                                                                                        | YES             | YES [R2]        | 1                  | 7 [R2]    | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| ACCURACY - -                   | SUBMERGENCE                                                                                  | NA              | NA              | NA                 | NA        | NA          | NA          |                                                                                                                                                                                                                                                                     |
| SPEC: NA                       |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| DEMO: NA                       |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| ZONE NO.: PC240609             |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| SUBMERGENCE: NA                |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| SPRAY: YES                     |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
|                                |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
|                                |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| DOCUMENTATION ACCEPTABILITY:   | DOCUMENT REFERENCE:                                                                          |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,                                                                                                                                                                                                                     |
| ACCEPTABLE TO NUREG 0588,CAT I | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                 |                 |                    |           |             |             | SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                                                                        |
|                                | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                              |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                 |                 |                    |           |             |             | 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325. |
|                                | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2]                                              |                 |                 |                    |           |             |             | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                    |
|                                | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
|                                | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) R2]                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
|                                | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| MAINT/SURVEILL - - -           |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| REFERENCE: NA                  |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| QUALIFIED LIFE - - -           |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| (YEARS): 40                    |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| REFERENCE: 2                   |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
|                                |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
|                                |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |



QUAL REF #\_E021PAP\_\_\_\_\_ REV 2

19-Mar-86

ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z16E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        |         |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC240135  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                      |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
|--------------------------------|-------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | PARAMETER                                                                                       | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                                                                       |
|                                |                                                                                                 |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                                                                               |
| EQUIP NO.: 2CES*Z17E           |                                                                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
| SPEC NO.: E021P                | OP.TIME:                                                                                        | 100 DAYS        | 100 DAYS        | 3                  | 2,5 [R2]  | AN + DATA   | YES         |                                                                                                                                                                                                                                                                                               |
| SYSTEM: CES-COMMON             | TEMP (F):                                                                                       | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                                                                                                                                                                                                                                        |
| ELECTRICAL SYSTEM              | NORMAL                                                                                          | 150/135         | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2                                                                                                                                                                                                                                                                                        |
|                                | ABNORMAL                                                                                        | 190             | 248             | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                               |
| TYPE: (DESCRIPTION)            | ACCIDENT                                                                                        | 340             | 370             | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                                               |
| CONTROL ELECTRICAL PENETRATION | PRESS(PSIG)                                                                                     | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                                                                                                                                                                                                                                        |
| 600 VOLTS                      | NORMAL                                                                                          | 0.5 TO 1.0      | 1.0 [R2]        | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                               |
|                                | ABNORMAL                                                                                        | 1.95            | 62              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                               |
| MANUFACTURER: CONAX            | ACCIDENT                                                                                        | 45              | 72 [R2]         | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                                               |
|                                | RH (%) :                                                                                        | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                                                                                                                                                                                                                                        |
| MODEL NO.: 10004-14            | NORMAL                                                                                          | 90              | 95              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                               |
|                                | ABNORMAL                                                                                        | 90              | 95 [R2]         | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                               |
| SAFETY FUNCTION: - - -         | ACCIDENT                                                                                        | STEAM           | STEAM           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                               |
| PROVIDE CONTINUITY OF          | RADIATION:                                                                                      | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1                                                                                                                                                                                                                                                                                        |
| ELECTRICAL CIRCUITS AND        | NORM GAMMA                                                                                      | 3.0E6           |                 | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                               |
| CONTAINMENT INTEGRITY          | ACC GAMMA                                                                                       | 2.5E7           | 1.285E8         | 1                  | 2         | TEST-SIM    | YES         | NOTE 4                                                                                                                                                                                                                                                                                        |
| OP. CODE: A                    | NORM BETA                                                                                       | 6.8E5           |                 | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                               |
|                                | ACC BETA                                                                                        | 6.3E8           | 9.4E8 [R2]      | 1                  | 2,6 [R2]  | TEST-SIM    | YES         | NOTE 4                                                                                                                                                                                                                                                                                        |
|                                | NEUTRON                                                                                         | 4.2E12          |                 | 1                  | 2,4 [R2]  | AN + DATA   | NA          |                                                                                                                                                                                                                                                                                               |
|                                | SPRAY                                                                                           | YES             | YES [R2]        | 1                  | 7 [R2]    | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                                               |
| ACCURACY - -                   | SUBMERGENCE                                                                                     | NA              | NA              | NA                 | NA        | NA          | NA          |                                                                                                                                                                                                                                                                                               |
| SPEC: NA                       |                                                                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
| DEMO: NA                       |                                                                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
| ZONE NO.: PC250627             |                                                                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
| SUBMERGENCE: NA                |                                                                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
| SPRAY: YES                     |                                                                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
|                                | DOCUMENT REFERENCE:                                                                             |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                                               |
|                                | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN<br>CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX<br>DESIGN/AVERAGE.                                                                                                                                                                                                                                     |
|                                | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,<br>SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                 |                 |                    |           |             |             | 3.FOR OUTBOARD SIDE QUALIFICATION<br>SEE PAGE 2: SINCE IT EMPLOYS SAME<br>MATERIALS (EXCEPT VITON) IT IS<br>QUALIFIED TO THE ENVIRONMENTAL<br>CONDITIONS AT THE INBOARD SIDE;<br>QUALIFIED PARAMETERS FOR VITON<br>SEALINGS ENVELOPE SPECIFIED CON-<br>DITIONS - SEE CONAX REPORT<br>IPS-325. |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:<br>FILE NO. CES-2                                     |                 |                 |                    |           |             |             | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA<br>AND NEUTRON DOSES; QUALIFIED<br>9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                                        |
|                                | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2]                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
|                                | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                   |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
|                                | 6. VENDOR REPORT SDFF #IEEE 1.290-5017A<br>(CONAX IPS-1018) [R2]                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
|                                | 7. VENDOR LETTER SDFF #IEEE 1.290-5027A [R2]                                                    |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
| MAINT/SURVEILL - - -           |                                                                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
| REFERENCE: NA                  |                                                                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
| QUALIFIED LIFE - - -           |                                                                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
| (YEARS): 40                    |                                                                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
| REFERENCE: 2                   |                                                                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                   |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                                               |



QUAL REF #\_E021PAQ\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES*Z17E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC240135

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|--------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                             |
|                                |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                     |
| EQUIP NO.: 2CES*Z18E           |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| SPEC NO.: E021P                | OP.TIME:                                                                                     | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                                                                                                                                                                                                     |
| SYSTEM: CES-COMMON             | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                              |
| ELECTRICAL SYSTEM              | NORMAL                                                                                       | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                              |
|                                | ABNORMAL                                                                                     | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| TYPE: (DESCRIPTION)            | ACCIDENT                                                                                     | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                     |
| ILVP/CONTROL ELECTRICAL        | PRESS(PSIG)                                                                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                              |
| PENETRATION 600 VOLTS          | NORMAL                                                                                       | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
|                                | ABNORMAL                                                                                     | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| MANUFACTURER: CONAX            | ACCIDENT                                                                                     | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                     |
|                                | RH (%) :                                                                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                              |
| MODEL NO.: 10005-08            | NORMAL                                                                                       | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
|                                | ABNORMAL                                                                                     | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| SAFETY FUNCTION: - - -         | ACCIDENT                                                                                     | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| PROVIDE CONTINUITY OF          | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                              |
| ELECTRICAL CIRCUITS AND        | NORM GAMMA                                                                                   | 2.3E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| CONTAINMENT INTEGRITY          | ACC GAMMA                                                                                    | 3.1E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                              |
| OP. CODE: A                    | NORM BETA                                                                                    | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
|                                | ACC BETA                                                                                     | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                              |
|                                | NEUTRON                                                                                      | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                                                                                                                                                                                                     |
|                                | SPRAY                                                                                        | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| ACCURACY - -                   | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                     |
| SPEC: NA                       |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| DEMO: NA                       |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| ZONE NO.: PC240609             |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| SUBMERGENCE: NA                |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| SPRAY: YES                     |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                     |
|                                | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                              |
|                                | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325. |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                    |                    |                    |           |                |                | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                    |
|                                | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2]                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| DOCUMENTATION ACCEPTABILITY:   | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| ACCEPTABLE TO NUREG 0588,CAT I | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| MAINT/SURVEILL - - -           |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| REFERENCE: NA                  |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| QUALIFIED LIFE - - -           |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| (YEARS): 40                    |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| REFERENCE: 2                   |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |



18-Feb-86

EQUIPMENT DESCRIPTION

| PARAMETER    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|--------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|              |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| OP.TIME:     | 100 DAYS           | 100 DAYS           | 3                  | 2, 5 [R2] | AN + DATA      | YES            |         |
| TEMP (F):    |                    |                    |                    |           |                |                | NOTE 1  |
| NORMAL       | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| ABNORMAL     | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
| ACCIDENT     | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
| PRESS (PSIG) |                    |                    |                    |           |                |                | NOTE 1  |
| NORMAL       | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
| ABNORMAL     | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
| ACCIDENT     | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
| RH (%):      |                    |                    |                    |           |                |                | NOTE 1  |
| NORMAL       | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
| ABNORMAL     | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
| ACCIDENT     | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
| RADIATION:   |                    |                    |                    |           |                |                | NOTE 1  |
| NORM GAMMA   | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
| ACC GAMMA    | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
| NORM BETA    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
| ACC BETA     | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
| NEUTRON      | NA                 |                    | 1                  | NA        | NA             | NA             |         |
| SPRAY        | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
| SUBMERGENCE  | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.





| EQUIPMENT DESCRIPTION          |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|--------------------------------|------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                |            | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                |            |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.:                     | 2CES*Z19E  |                                                 |                    |                    |                    |           |                |                |                                                 |
| SPEC NO.:                      | E021P      | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                 |
| SYSTEM:                        | CES-COMMON | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| ELECTRICAL SYSTEM              |            | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                          |
|                                |            | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| TYPE: (DESCRIPTION)            |            | ACCIDENT                                        | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| CONTROL ELECTRICAL             |            | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| PENETRATION 600 VOLTS          |            | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |            | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| MANUFACTURER: CONAX            |            | ACCIDENT                                        | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                 |
|                                |            | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| MODEL NO.:                     | 10004-05   | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |            | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| SAFETY FUNCTION: - - -         |            | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| PROVIDE CONTINUITY OF          |            | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| ELECTRICAL CIRCUITS AND        |            | NORM GAMMA                                      | 3.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| CONTAINMENT INTEGRITY          |            | ACC GAMMA                                       | 2.5E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                          |
| OP. CODE: A                    |            | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |            | ACC BETA                                        | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                          |
|                                |            | NEUTRON                                         | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                 |
|                                |            | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                 |
| ACCURACY - -                   |            | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| SPEC: NA                       |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| DEMO: NA                       |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.:                      | PC250627   |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE:                   | NA         | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY:                         | YES        | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
|                                |            | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
|                                |            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | DESIGN/AVERAGE.                                 |
|                                |            | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION               |
|                                |            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                | SEE PAGE 2: SINCE IT EMPLOYS SAME               |
|                                |            | FILE NO. CES-2                                  |                    |                    |                    |           |                |                | MATERIALS (EXCEPT VITON) IT IS                  |
| DOCUMENTATION ACCEPTABILITY:   |            | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2] |                    |                    |                    |           |                |                | QUALIFIED TO THE ENVIRONMENTAL                  |
| ACCEPTABLE TO NUREG 0588,CAT I |            | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                | CONDITIONS AT THE INBOARD SIDE;                 |
|                                |            | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                | QUALIFIED PARAMETERS FOR VITON                  |
|                                |            | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                | SEALINGS ENVELOPE SPECIFIED CON-                |
|                                |            | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                | DITIONS - SEE CONAX REPORT                      |
|                                |            |                                                 |                    |                    |                    |           |                |                | IPS-325.                                        |
| MAINT/SURVEILL - - -           |            |                                                 |                    |                    |                    |           |                |                | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA           |
| REFERENCE: NA                  |            |                                                 |                    |                    |                    |           |                |                | AND NEUTRON DOSES; QUALIFIED                    |
|                                |            |                                                 |                    |                    |                    |           |                |                | 9.4E8 RADS COVERS BETA DOSES.                   |
| QUALIFIED LIFE - - -           |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| (YEARS): 40                    |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                   |            |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |            | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                |                                                 |



QUAL REF #\_E021PAS\_ REV 2

19-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES*Z19E | TOP.TIME:                                  | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | IRH (%)                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 90                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC240135

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



18-Feb-86

QUAL REF #\_E021PAT\_ REV 2

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|---------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                                                       |
|                                 |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                                               |
| EQUIP NO.: 2CES*Z20E            | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                                                                                                                                                                                                                               |
| SPEC NO.: E021P                 | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                                                        |
| SYSTEM: CES-COMMON              | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                                                        |
| ELECTRICAL SYSTEM               | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| TYPE: (DESCRIPTION)             | ACCIDENT                                        | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                                               |
| CONTROL ELECTRICAL              | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                                                        |
| PENETRATION 600 VOLTS           | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| MANUFACTURER: CONAX             | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| MODEL NO.: 10004-06             | ACCIDENT                                        | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                                               |
| SAFETY FUNCTION: - - -          | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                                                        |
| PROVIDE CONTINUITY OF           | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| ELECTRICAL CIRCUITS AND         | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| CONTAINMENT INTEGRITY           | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| OP. CODE: A                     | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                                                        |
|                                 | NORM GAMMA                                      | 2.3E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
|                                 | ACC GAMMA                                       | 3.1E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                                                        |
|                                 | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
|                                 | ACC BETA                                        | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                                                        |
|                                 | NEUTRON                                         | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                                                                                                                                                                                                                               |
|                                 | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| ACCURACY - -                    | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                                               |
| SPEC: NA                        |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| DEMO: NA                        |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| ZONE NO.: PC240609              |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| SUBMERGENCE: NA                 | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                                               |
| SPRAY: YES                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX<br>DESIGN/AVERAGE.                                                                                                                                                                                                                                     |
|                                 | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION<br>SEE PAGE 2: SINCE IT EMPLOYS SAME<br>MATERIALS (EXCEPT VITON) IT IS<br>QUALIFIED TO THE ENVIRONMENTAL<br>CONDITIONS AT THE INBOARD SIDE;<br>QUALIFIED PARAMETERS FOR VITON<br>SEALINGS ENVELOPE SPECIFIED CON-<br>DITIONS - SEE CONAX REPORT<br>IPS-325. |
|                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | 4. QUALIFIED 1.285E8 RADS COVERS GAMMA<br>AND NEUTRON DOSES; QUALIFIED<br>9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                                       |
|                                 | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                                 | FILE NO. CES-2                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| DOCUMENTATION ACCEPTABILITY:    | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2] |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| ACCEPTABLE TO NUREG 0588, CAT I | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                                 | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                                 | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                                 | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| MAINT/SURVEILL - - -            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| REFERENCE: NA                   |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| QUALIFIED LIFE - - -            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| (YEARS): 40                     |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| REFERENCE: 2                    |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |



18-Feb-86

QUAL REF #\_E021PAT\_ REV 2

| EQUIPMENT DESCRIPTION    |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                          |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                          |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:               | 2CES*Z20E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:                | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                          |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                          |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                          |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                          |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |           | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                          |           | NORMAL                                     | 50                 | 90                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                          |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                          |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                          |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                          |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                          |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                          |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                |           | SC240135                                   |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:             |           |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                   |           |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO |           |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY     |           |                                            |                    |                    |                    |           |                |                |         |
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ZONE NO.: SC240135  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|--------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS                                                                                                                                                                                                                                                                                       |
|                                |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                 |                                                                                                                                                                                                                                                                                               |
| EQUIP NO.: 2CES*Z21E           |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| SPEC NO.: E021P                | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES             |                                                                                                                                                                                                                                                                                               |
| SYSTEM: CES-COMMON             | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                                                                                                                                                                                                                                                                        |
| ELECTRICAL SYSTEM              | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA              | NOTE 2                                                                                                                                                                                                                                                                                        |
|                                | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
| TYPE: (DESCRIPTION)            | ACCIDENT                                        | 340                | 370                | 1                  | 2         | TEST-SIM       | YES             |                                                                                                                                                                                                                                                                                               |
| ILVP ELECTRICAL                | PRESS(PSIG)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                                                                                                                                                                                                                                                                        |
| PENETRATION 600 VOLTS          | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
|                                | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
| MANUFACTURER: CONAX            | ACCIDENT                                        | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES             |                                                                                                                                                                                                                                                                                               |
|                                | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                                                                                                                                                                                                                                                                        |
| MODEL NO.: 10005-02            | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
|                                | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
| SAFETY FUNCTION: - - -         | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
| PROVIDE CONTINUITY OF          | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                                                                                                                                                                                                                                                                        |
| ELECTRICAL CIRCUITS AND        | NORM GAMMA                                      | 3.0E6              |                    | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
| CONTAINMENT INTEGRITY          | ACC GAMMA                                       | 2.5E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES             | NOTE 4                                                                                                                                                                                                                                                                                        |
| OP. CODE: A                    | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
|                                | ACC BETA                                        | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES             | NOTE 4                                                                                                                                                                                                                                                                                        |
|                                | NEUTRON                                         | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA              |                                                                                                                                                                                                                                                                                               |
|                                | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA              |                                                                                                                                                                                                                                                                                               |
| ACCURACY - -                   | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA              |                                                                                                                                                                                                                                                                                               |
| SPEC: NA                       |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| DEMO: NA                       |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| ZONE NO.: PC250627             |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| SUBMERGENCE: NA                |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| SPRAY: YES                     |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                 | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                                               |
|                                | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                 | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX<br>DESIGN/AVERAGE.                                                                                                                                                                                                                                     |
|                                | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                 | 3.FOR OUTBOARD SIDE QUALIFICATION<br>SEE PAGE 2: SINCE IT EMPLOYS SAME<br>MATERIALS (EXCEPT VITON) IT IS<br>QUALIFIED TO THE ENVIRONMENTAL<br>CONDITIONS AT THE INBOARD SIDE;<br>QUALIFIED PARAMETERS FOR VITON<br>SEALINGS ENVELOPE SPECIFIED CON-<br>DITIONS - SEE CONAX REPORT<br>IPS-325. |
|                                | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                 | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA<br>AND NEUTRON DOSES; QUALIFIED<br>9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                                        |
|                                | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | FILE NO. CES-2                                  |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2] |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| DOCUMENTATION ACCEPTABILITY:   |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| ACCEPTABLE TO NUREG 0588,CAT I |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| MAINT/SURVEILL - - -           |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| REFERENCE: NA                  |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| QUALIFIED LIFE - - -           |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| (YEARS): 40                    |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
| REFERENCE: 2                   |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                |                                                 |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                 |                                                                                                                                                                                                                                                                                               |







## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION                                                                                                                     | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                                                                                                                           | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                                                                                                                           |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2CES*Z22E<br>ISPEC NO.: E021P<br>SYSTEM: CES-COMMON<br>ELECTRICAL SYSTEM                                                       | OP.TIME:                                   | 100 DAYS        | 100 DAYS        | 3                  | 2,5 [R2]  | AN + DATA   | YES         |         |
|                                                                                                                                           | TEMP (F):                                  | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
|                                                                                                                                           | NORMAL                                     | 150/135         | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                                                                                                                           | ABNORMAL                                   | 190             | 248             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                                                                                           | ACCIDENT                                   | 340             | 370             | 1                  | 2         | TEST-SIM    | YES         |         |
| TYPE: (DESCRIPTION)<br>INSTRUMENT ELECTRICAL<br>PENETRATION 300 VOLTS                                                                     | PRESS(PSIG)                                | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
|                                                                                                                                           | NORMAL                                     | 0.5 TO 1.0      | 1.0 [R2]        | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                                                                                           | ABNORMAL                                   | 1.95            | 62              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                                                                                           | ACCIDENT                                   | 45              | 72 [R2]         | 1                  | 2         | TEST-SIM    | YES         |         |
| MANUFACTURER: CONAX                                                                                                                       | RH (%) :                                   | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
|                                                                                                                                           | NORMAL                                     | 90              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                                                                                           | ABNORMAL                                   | 90              | 95 [R2]         | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                                                                                           | ACCIDENT                                   | STEAM           | STEAM           | 1                  | 2         | TEST-SIM    | NA          |         |
| MODEL NO.: 10003-08<br>SAFETY FUNCTION: - - -<br>PROVIDE CONTINUITY OF<br>ELECTRICAL CIRCUITS AND<br>CONTAINMENT INTEGRITY<br>POP CODE: A | RADIATION:                                 | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
|                                                                                                                                           | NORM GAMMA                                 | 2.3E6           |                 | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                                                                                           | ACC GAMMA                                  | 3.1E7           | 1.285E8         | 1                  | 2         | TEST-SIM    | YES         | NOTE 4  |
|                                                                                                                                           | NORM BETA                                  | 6.8E5           |                 | 1                  | 2         | TEST-SIM    | NA          |         |
|                                                                                                                                           | ACC BETA                                   | 6.3E8           | 9.4E8 [R2]      | 1                  | 2,6 [R2]  | TEST-SIM    | YES         | NOTE 4  |
|                                                                                                                                           | NEUTRON                                    | 4.2E12          |                 | 1                  | 2,4 [R2]  | AN + DATA   | NA          |         |
|                                                                                                                                           | SPRAY                                      | YES             | YES [R2]        | 1                  | 7 [R2]    | TEST-SIM    | NA          |         |
| ACCURACY - -<br>SPEC: NA<br>DEMO: NA                                                                                                      | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| ZONE NO.: PC240609<br>SUBMERGENCE: NA<br>SPRAY: YES                                                                                       |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I                                                                            |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -<br>REFERENCE: NA                                                                                                     |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2                                                                                       |                                            |                 |                 |                    |           |             |             |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325.  
 4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.  
 5.PORTS NO 1,2,3,4 OF THIS PENETRATION ARE USED FOR 2RMS\*RE-1B,1D EQUIPMENT



NINE MILE POINT - UNIT 2  
DOCKET NUMBER 50-410

SYSTEM COMPONENT EVALUATION WORK SHEET

PAGE 2  
OF 2

QUAL REF #\_E021PAV\_\_\_\_ REV 2

19-Feb-86

| EQUIPMENT DESCRIPTION | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CES*Z22E  | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2, 5 [R2] | AN + DATA      | YES            |         |
| SPEC NO.: E021P       | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                       | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                       | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       | ACC BETA                                   | 16.1E6 [R2]        |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC240135  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





PAGE 1  
OF 2

| EQUIPMENT DESCRIPTION                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|-----------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                               | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                               |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2CES*Z23E                          |                                            |                 |                 |                    |           |             |             |         |
| SPEC NO.: E021P                               | OP.TIME:                                   | 100 DAYS        | 100 DAYS        | 3                  | 2,5 [R2]  | AN + DATA   | YES         |         |
| SYSTEM: CES-COMMON                            | TEMP (F):                                  | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
| ELECTRICAL SYSTEM                             | NORMAL                                     | 150/135         | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                               | ABNORMAL                                   | 190             | 248             | 1                  | 2         | TEST-SIM    | NA          |         |
| TYPE: (DESCRIPTION)                           | ACCIDENTI                                  | 340             | 380 [R2]        | 1                  | 2         | TEST-SIM    | YES         |         |
| COAX INSTR ELECTRICAL [R2]                    | PRESS(PSIG)                                | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
| PENETRATION 300 VOLTS                         | NORMAL                                     | 0.5 TO 1.0      | 1.0 [R2]        | 1                  | 2         | TEST-SIM    | NA          |         |
|                                               | ABNORMAL                                   | 1.95            | 62              | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: CONAX                           | ACCIDENTI                                  | 45              | 69              | 1                  | 2         | TEST-SIM    | YES         |         |
|                                               | RH (%):                                    | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
| MODEL NO.: 10001-03                           | NORMAL                                     | 90              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                               | ABNORMAL                                   | 90              | 95 [R2]         | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -                        | ACCIDENTI                                  | STEAM           | STEAM           | 1                  | 2         | TEST-SIM    | NA          |         |
| PROVIDE CONTINUITY OF                         | RADIATION:                                 | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
| ELECTRICAL CIRCUITS AND                       | NORM GAMMA                                 | 3E6             |                 | 1                  | 2         | TEST-SIM    | NA          |         |
| CONTAINMENT INTEGRITY                         | ACC GAMMA                                  | 2.5E7           | 1.10E8          | 1                  | 2         | TEST-SIM    | YES         | NOTE 4  |
| OP. CODE: A                                   | NORM BETA                                  | 6.8E5           |                 | 1                  | 2         | TEST-SIM    | NA          |         |
|                                               | ACC BETA                                   | 6.3E8           | 9.4E8 [R2]      | 1                  | 2,6 [R2]  | TEST-SIM    | YES         | NOTE 4  |
|                                               | NEUTRON                                    | 4.2E12          |                 | 1                  | 2,4 [R2]  | AN + DATA   | NA          |         |
|                                               | SPRAY                                      | YES             | YES [R2]        | 6                  | 7 [R2]    | TEST-SIM    | NA          |         |
| ACCURACY - -                                  | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: NA                                      |                                            |                 |                 |                    |           |             |             |         |
| DEMO: NA                                      |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.: PC250627                            |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE: NA                               |                                            |                 |                 |                    |           |             |             |         |
| SPRAY: YES                                    |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                  |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                          |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: NA                                 |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                          |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 40                                   |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                  |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                                            |                 |                 |                    |           |             |             |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX  
DESIGN/AVERAGE.  
3.FOR OUTBOARD SIDE QUALIFICATION  
SEE PAGE 2: SINCE IT EMPLOYS SAME  
MATERIALS (EXCEPT VITON) IT IS  
QUALIFIED TO THE ENVIRONMENTAL  
CONDITIONS AT THE INBOARD SIDE;  
QUALIFIED PARAMETERS FOR VITON  
SEALINGS ENVELOPE SPECIFIED CON-  
DITIONS - SEE CONAX REPORT  
IPS-325.  
4.QUALIFIED 1.1E8 RADS COVERS GAMMA  
AND NEUTRON DOSES; QUALIFIED  
9.4E8 RADS COVERS BETA DOSES.



| EQUIPMENT DESCRIPTION                            |                    | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------------------------|--------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                  |                    | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
| EQUIP NO.:                                       |                    |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| SPEC NO.:                                        | 2CES*Z23E<br>E021P |                                            |                    |                    |                    |           |                |                |         |
|                                                  |                    | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
|                                                  |                    | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                                                  |                    | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                  |                    | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                                  |                    | ACCIDENT                                   | 175                | 380 [R2]           | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                  |                    | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |                    | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ACCIDENT                                   | 2.8                | 69                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                  |                    | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |                    | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                                                  |                    | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |                    | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ACC GAMMA                                  | 5.3E7              | 1.10E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                  |                    | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                                  |                    | ACC BETA                                   | 6.1E6 [R2]         |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                  |                    | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                                  |                    | SPRAY                                      | NA                 | YES [R2]           | NA                 | 7 [R2]    | TEST-SIM       | NA             | NOTE 3  |
|                                                  |                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                                        |                    | SC240135                                   |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                     |                    |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                           |                    |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY |                    |                                            |                    |                    |                    |           |                |                |         |

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION      |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|----------------------------|------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            |            | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                                                       |
|                            |            |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                                               |
| EQUIP NO.:                 | 2CES*Z24E  |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| SPEC NO.:                  | E021P      | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                                                                                                                                                                                                                               |
| SYSTEM:                    | CES-COMMON | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                                                        |
| ELECTRICAL SYSTEM          |            | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                                                        |
|                            |            | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| ITYPE: (DESCRIPTION)       |            | ACCIDENT                                        | 340                | 380 [R2]           | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                                               |
| COAX INSTR ELECTRICAL [R2] |            | PRESS(PSIG)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                                                        |
| PENETRATION 300 VOLTS      |            | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
|                            |            | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| MANUFACTURER: CONAX        |            | ACCIDENT                                        | 45                 | 69                 | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                                               |
|                            |            | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                                                        |
| MODEL NO.:                 | I10001-01  | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
|                            |            | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| SAFETY FUNCTION: - - -     |            | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| PROVIDE CONTINUITY OF      |            | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                                                        |
| ELECTRICAL CIRCUITS AND    |            | NORM GAMMA                                      | 2.3E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| CONTAINMENT INTEGRITY      |            | ACC GAMMA                                       | 3.1E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                                                        |
| OP. CODE: A                |            | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
|                            |            | ACC BETA                                        | 6.3E8              | 19.4E8 [R2]        | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                                                        |
|                            |            | NEUTRON                                         | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                                                                                                                                                                                                                               |
|                            |            | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| ACCURACY - -               |            | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                                               |
| SPEC: NA                   |            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| DEMO: NA                   |            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| ZONE NO.:                  | PC240609   |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| SUBMERGENCE:               | NA         |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| SPRAY:                     | YES        |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                            |            | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                                               |
|                            |            | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX<br>DESIGN/AVERAGE.                                                                                                                                                                                                                                     |
|                            |            | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION<br>SEE PAGE 2: SINCE IT EMPLOYS SAME<br>MATERIALS (EXCEPT VITON) IT IS<br>QUALIFIED TO THE ENVIRONMENTAL<br>CONDITIONS AT THE INBOARD SIDE;<br>QUALIFIED PARAMETERS FOR VITON<br>SEALINGS ENVELOPE SPECIFIED CON-<br>DITIONS - SEE CONAX REPORT<br>IPS-325. |
|                            |            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA<br>AND NEUTRON DOSES; QUALIFIED<br>9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                                        |
|                            |            | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                            |            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                            |            | FILE NO. CES-2                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                            |            | 4. CALCULATION # 12177-EQS-19 (RADIATION) [R2]  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                            |            | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                            |            | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                            |            | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                            |            | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                            |            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| MAINT/SURVEILL - - -       |            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| REFERENCE: NA              |            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                            |            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| QUALIFIED LIFE - - -       |            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| (YEARS): 40                |            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| REFERENCE: 2               |            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                            |            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                            |            | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |



QUAL REF #\_E021PAX\_\_\_\_ REV 2

19-Feb-86

| EQUIPMENT DESCRIPTION                   | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                         | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                         |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CES*Z24E<br>SPEC NO.: E021P | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
|                                         | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                                         | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                         | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                         | ACCIDENT                                   | 175                | 380 [R2]           | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                         | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                                         | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                                         | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                         | ACCIDENT                                   | 2.8                | 69                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                         | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                                         | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                         | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                                         | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                                         | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                         | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                         | ACC GAMMA                                  | 5.3E7              | 1.10E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                         | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                         | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                                         | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                         | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             | NOTE 3  |
|                                         | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

IZONE NO.: SC240135  
ISUBMERGENCE:  
ISPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





QUAL REF #\_E021PAY\_\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
|--------------------------------|----------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | PARAMETER                                                                                    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                                             |
|                                |                                                                                              |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                                                     |
| EQUIP NO.: 2CES*Z25E           | OP.TIME:                                                                                     | 100 DAYS        | 100 DAYS        | 3                  | 2,5 [R2]  | AN + DATA   | YES         |                                                                                                                                                                                                                                                                     |
| SPEC NO.: E021P                | TEMP (F):                                                                                    |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| SYSTEM: CES-COMMON             | NORMAL                                                                                       | 150/135         | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1                                                                                                                                                                                                                                                              |
| ELECTRICAL SYSTEM              | ABNORMAL                                                                                     | 190             | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2                                                                                                                                                                                                                                                              |
| TYPE: (DESCRIPTION)            | ACCIDENT                                                                                     | 340             | 370             | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                     |
| INSTRUMENT ELECTRICAL          | PRESS (PSIG)                                                                                 |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                              |
| PENETRATION 300 VOLTS          | NORMAL                                                                                       | 0.5 TO 1.0      | 1.0 [R2]        | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| MANUFACTURER: CONAX            | ABNORMAL                                                                                     | 1.95            | 62              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| MODEL NO.: 10004-07            | ACCIDENT                                                                                     | 45              | 72 [R2]         | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                     |
| SAFETY FUNCTION: - - -         | RH (%)                                                                                       |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                              |
| PROVIDE CONTINUITY OF          | NORMAL                                                                                       | 90              | 95              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| ELECTRICAL CIRCUITS AND        | ABNORMAL                                                                                     | 90              | 95 [R2]         | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| CONTAINMENT INTEGRITY          | ACCIDENT                                                                                     | STEAM           | STEAM           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| OP. CODE: A                    | RADIATION:                                                                                   |                 |                 |                    |           |             |             | NOTE 1                                                                                                                                                                                                                                                              |
|                                | NORM GAMMA                                                                                   | 3.0E6           |                 | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
|                                | ACC GAMMA                                                                                    | 2.5E7           | 1.285E8         | 1                  | 2         | TEST-SIM    | YES         | NOTE 4                                                                                                                                                                                                                                                              |
|                                | NORM BETA                                                                                    | 6.8E5           |                 | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
|                                | ACC BETA                                                                                     | 6.3E8           | 9.4E8 [R2]      | 1                  | 2,6 [R2]  | TEST-SIM    | YES         | NOTE 4                                                                                                                                                                                                                                                              |
|                                | NEUTRON                                                                                      | 4.2E12          |                 | 1                  | 2,4 [R2]  | AN + DATA   | NA          |                                                                                                                                                                                                                                                                     |
|                                | SPRAY                                                                                        | YES             | YES [R2]        | 1                  | 7 [R2]    | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| ACCURACY - - -                 | SUBMERGENCE                                                                                  | NA              | NA              | NA                 | NA        | NA          | NA          |                                                                                                                                                                                                                                                                     |
| SPEC: NA                       |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| DEMO: NA                       |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| ZONE NO.: PC250627             |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| SUBMERGENCE: NA                |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| SPRAY: YES                     |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| DOCUMENTATION ACCEPTABILITY:   | DOCUMENT REFERENCE:                                                                          |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                        |
| ACCEPTABLE TO NUREG 0588,CAT I | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                              |
|                                | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                 |                 |                    |           |             |             | 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325. |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                 |                 |                    |           |             |             | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                    |
|                                | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2]                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
|                                | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
|                                | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
|                                | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| MAINT/SURVEILL - - -           |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| REFERENCE: NA                  |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| QUALIFIED LIFE - - -           |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| (YEARS): 40                    |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
| REFERENCE: 2                   |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                     |



QUAL REF #\_E021PAY\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES*Z25E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%) :                                   |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC240135  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



18-Feb-86

QUAL REF # E021PAZ REV 2

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|---------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                              |
|                                 |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                      |
| EQUIP NO.: 2CES*Z26E            | OP.TIME:                                                                                     | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                                                                                                                                                                                                      |
| SPEC NO.: E021P                 | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
| SYSTEM: CES-COMMON              | NORMAL                                                                                       | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                               |
| ELECTRICAL SYSTEM               | ABNORMAL                                                                                     | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| TYPE: (DESCRIPTION)             | ACCIDENT                                                                                     | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                      |
| CONTROL ELECTRICAL              | PRESS (PSIG)                                                                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
| PENETRATION 600 VOLTS           | NORMAL                                                                                       | 10.5 TO 1.0        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| MANUFACTURER: CONAX             | ABNORMAL                                                                                     | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| MODEL NO.: 10006-01             | ACCIDENT                                                                                     | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                      |
| SAFETY FUNCTION: - - -          | RH (%):                                                                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
| PROVIDE CONTINUITY OF           | NORMAL                                                                                       | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| ELECTRICAL CIRCUITS AND         | ABNORMAL                                                                                     | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| CONTAINMENT INTEGRITY           | ACCIDENT                                                                                     | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| OP. CODE: A                     | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
|                                 | NORM GAMMA                                                                                   | 2.3E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 | ACC GAMMA                                                                                    | 3.1E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                               |
|                                 | NORM BETA                                                                                    | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 | ACC BETA                                                                                     | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                               |
|                                 | NEUTRON                                                                                      | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                                                                                                                                                                                                      |
|                                 | SPRAY                                                                                        | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| ACCURACY - -                    | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                      |
| SPEC: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| DEMO: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| ZONE NO.: PC240609              |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| SUBMERGENCE: NA                 |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| SPRAY: YES                      |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| DOCUMENTATION ACCEPTABILITY:    | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                        |
| ACCEPTABLE TO NUREG 0588, CAT I | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                              |
|                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                    |                    |                    |           |                |                | 3. FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325. |
|                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                    |                    |                    |           |                |                | 4. QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                    |
|                                 | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2]                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| MAINT/SURVEILL - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| REFERENCE: NA                   |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| QUALIFIED LIFE - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| (YEARS): 40                     |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| REFERENCE: 2                    |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |



18-Feb-86

## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

[R2] INDICATES CHANGES MADE IN THIS REVISION.





| EQUIPMENT DESCRIPTION                                               | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                     | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                     |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CES-Z27E                                                | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.: E021P                                                     | TEMP (F):                                  | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
| SYSTEM: CES-COMMON ELECTRICAL SYSTEM                                | NORMAL                                     | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                                                     | ABNORMAL                                   | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                                                 | ACCIDENT                                   | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |         |
| CONTROL ELECTRICAL [R2]                                             | PRESS(PSIG)                                | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
| PENETRATION 600 VOLTS                                               | NORMAL                                     | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                     | ABNORMAL                                   | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: CONAX                                                 | ACCIDENT                                   | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                     | RH (%) :                                   | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
| MODEL NO.: 10002-02                                                 | NORMAL                                     | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                     | ABNORMAL                                   | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
| SAFETY FUNCTION: - - -                                              | ACCIDENT                                   | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| PROVIDE CONTINUITY OF ELECTRICAL CIRCUITS AND CONTAINMENT INTEGRITY | RADIATION:                                 | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
| OP. CODE: A                                                         | NORM GAMMA                                 | 3.4E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                     | ACC GAMMA                                  | 2.5E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4  |
|                                                                     | NORM BETA                                  | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                     | ACC BETA                                   | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4  |
|                                                                     | NEUTRON                                    | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
|                                                                     | SPRAY                                      | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
| ACCURACY - - -                                                      | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             |                |         |
| SPEC: NA                                                            |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                                                            |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: PC250630                                                  |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                                                     |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: YES                                                          |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0508,CAT I      |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -<br>REFERENCE: NA                               |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2                 |                                            |                    |                    |                    |           |                |                |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.

**NOTES:**  
 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
 2.NORMAL TEMPERATURES ARE SHOWN AS MAX  
DESIGN/AVERAGE.  
 3.FOR OUTBOARD SIDE QUALIFICATION  
SEE PAGE 2: SINCE IT EMPLOYS SAME  
MATERIALS (EXCEPT VITON) IT IS  
QUALIFIED TO THE ENVIRONMENTAL  
CONDITIONS AT THE INBOARD SIDE;  
 QUALIFIED PARAMETERS FOR VITON  
SEALINGS ENVELOPE SPECIFIED CON-  
DITIONS - SEE CONAX REPORT  
IPS-325.  
 4.QUALIFIED 1.285E8 RADS COVERS GAMMA  
AND NEUTRON DOSES; QUALIFIED  
9.4E8 RADS COVERS BETA DOSES.







| EQUIPMENT DESCRIPTION                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|-----------------------------------------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                               | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                               |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.: 2CES-Z28E                          |                                            |                 |                 |                    |           |             |             |         |
| SPEC NO.: E021P                               | OP.TIME:                                   | 100 DAYS        | 100 DAYS        | 3                  | 2,5 [R2]  | AN + DATA   | YES         |         |
| SYSTEM: CES-COMMON                            | TEMP (F):                                  | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
| ELECTRICAL SYSTEM                             | NORMAL                                     | 150/135         | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                               | ABNORMAL                                   | 190             | 248             | 1                  | 2         | TEST-SIM    | NA          |         |
| I TYPE: (DESCRIPTION)                         | ACCIDENT                                   | 340             | 370             | 1                  | 2         | TEST-SIM    | YES         |         |
| CONTROL ELECTRICAL [R2]                       | PRESS(PSIG)                                | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
| PENETRATION 600 VOLTS                         | NORMAL                                     | 0.5 TO 1.0      | 1.0 [R2]        | 1                  | 2         | TEST-SIM    | NA          |         |
|                                               | ABNORMAL                                   | 1.95            | 62              | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: CONAX                           | ACCIDENT                                   | 45              | 72 [R2]         | 1                  | 2         | TEST-SIM    | YES         |         |
|                                               | RH (%):                                    | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1  |
| MODEL NO.: 10002-01                           | NORMAL                                     | 90              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                               | ABNORMAL                                   | 90              | 95 [R2]         | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -                        | ACCIDENT                                   | STEAM           | STEAM           | 1                  | 2         | TEST-SIM    | NA          |         |
| PROVIDE CONTINUITY OF                         | RADIATION:                                 | - - - - -       | - - - - -       | - - - - -          | - - - - - | - - - - -   | - - - - -   | NOTE 1. |
| ELECTRICAL CIRCUITS AND                       | NORM GAMMA                                 | 2.6E6           |                 | 1                  | 2         | TEST-SIM    | NA          |         |
| CONTAINMENT INTEGRITY                         | ACC GAMMA                                  | 3.1E7           | 1.285E8         | 1                  | 2         | TEST-SIM    | YES         | NOTE 4  |
| OP. CODE: A                                   | NORM BETA                                  | 6.8E5           |                 | 1                  | 2         | TEST-SIM    | NA          |         |
|                                               | ACC BETA                                   | 6.3E8           | 9.4E8 [R2]      | 1                  | 2,6 [R2]  | TEST-SIM    | YES         | NOTE 4  |
|                                               | NEUTRON                                    | 4.2E12          |                 | 1                  | 2,4 [R2]  | AN + DATA   | NA          |         |
|                                               | SPRAY                                      | YES             | YES [R2]        | 1                  | 7 [R2]    | TEST-SIM    | NA          |         |
| ACCURACY - -                                  | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: NA                                      |                                            |                 |                 |                    |           |             |             |         |
| DEMO: NA                                      |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.: PC240612                            |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE: NA                               |                                            |                 |                 |                    |           |             |             |         |
| SPRAY: YES                                    |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:                  |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I                |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                          |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: NA                                 |                                            |                 |                 |                    |           |             |             |         |
|                                               |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                          |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 40                                   |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                                  |                                            |                 |                 |                    |           |             |             |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                                            |                 |                 |                    |           |             |             |         |

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
2.NORMAL TEMPERATURES ARE SHOWN AS MAX  
DESIGN/AVERAGE.  
3.FOR OUTBOARD SIDE QUALIFICATION  
SEE PAGE 2: SINCE IT EMPLOYS SAME  
MATERIALS (EXCEPT VITON) IT IS  
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CONDITIONS AT THE INBOARD SIDE;  
QUALIFIED PARAMETERS FOR VITON  
SEALINGS ENVELOPE SPECIFIED CON-  
DITIONS - SEE CONAX REPORT  
IPS-325.  
4.QUALIFIED 1.285E8 RADS COVERS GAMMA  
AND NEUTRON DOSES; QUALIFIED  
9.4E8 RADS COVERS BETA DOSES.









QUAL REF #\_E021PBC\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|---------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                              |
|                                 |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                      |
| EQUIP NO.: 2CES*Z29E            | OP. TIME:                                                                                    | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                                                                                                                                                                                                      |
| SPEC NO.: E021P                 | TEMP (F):                                                                                    |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| SYSTEM: CES-COMMON              | NORMAL                                                                                       | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1                                                                                                                                                                                                                                                               |
| ELECTRICAL SYSTEM               | ABNORMAL                                                                                     | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                               |
| TYPE: (DESCRIPTION)             | ACCIDENT                                                                                     | 340                | 380 [R2]           | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                      |
| COAX INSTR ELECTRICAL [R2]      | PRESS (PSIG)                                                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| PENETRATION 300 VOLTS           | NORMAL                                                                                       | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             | NOTE 1                                                                                                                                                                                                                                                               |
| MANUFACTURER: CONAX             | ABNORMAL                                                                                     | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| MODEL NO.: 10001-02             | ACCIDENT                                                                                     | 45                 | 69                 | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                      |
| SAFETY FUNCTION: - - -          | RH (%):                                                                                      |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| PROVIDE CONTINUITY OF           | NORMAL                                                                                       | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             | NOTE 1                                                                                                                                                                                                                                                               |
| ELECTRICAL CIRCUITS AND         | ABNORMAL                                                                                     | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| CONTAINMENT INTEGRITY           | ACCIDENT                                                                                     | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| OP. CODE: A                     | RADIATION:                                                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | NORM GAMMA                                                                                   | 3.4E6              |                    | 1                  | 2         | TEST-SIM       | NA             | NOTE 1                                                                                                                                                                                                                                                               |
|                                 | ACC GAMMA                                                                                    | 2.5E7              | 1.10E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                               |
|                                 | NORM BETA                                                                                    | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 | ACC BETA                                                                                     | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                               |
|                                 | NEUTRON                                                                                      | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                                                                                                                                                                                                      |
|                                 | SPRAY                                                                                        | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| ACCURACY - -                    | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                      |
| SPEC: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| DEMO: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| ZONE NO.: PC250630              |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| SUBMERGENCE: NA                 |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| SPRAY: YES                      |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| DOCUMENTATION ACCEPTABILITY:    | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                        |
| ACCEPTABLE TO NUREG 0588, CAT I | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EGEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                              |
|                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                    |                    |                    |           |                |                | 3. FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325. |
|                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                    |                    |                    |           |                |                | 4. QUALIFIED 1.1E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                      |
|                                 | 4. CALCULATION # 12177-EQS-19 (RADIATION) [R2]                                               |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| MAINT/SURVEILL - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| REFERENCE: NA                   |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| QUALIFIED LIFE - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| (YEARS): 40                     |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| REFERENCE: 2                    |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |



| EQUIPMENT DESCRIPTION    |                    | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------|--------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                          |                    | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
| EQUIP NO.:               |                    |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| SPEC NO.:                | 2CES*Z29E<br>E021P |                                            |                    |                    |                    |           |                |                |         |
|                          |                    | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
|                          |                    | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                          |                    | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                          |                    | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ACCIDENT                                   | 175                | 380 [R2]           | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |                    | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                          |                    | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ACCIDENT                                   | 2.8                | 69                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |                    | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                          |                    | NORMAL                                     | 50                 | 90                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                          |                    | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                          |                    | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |                    | ACC GAMMA                                  | 5.3E7              | 1.10E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |                    | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                          |                    | ACC BETA                                   | 6.1E6 [R2]         |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                          |                    | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                          |                    | SPRAY                                      | NA                 | YES [R2]           | NA                 | 7 [R2]    | TEST-SIM       | NA             | NOTE 3  |
|                          |                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                |                    | SC240135                                   |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:             |                    |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                   |                    |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO |                    |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY     |                    |                                            |                    |                    |                    |           |                |                |         |

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION          |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                 |                                                 |
|--------------------------------|------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|-------------------------------------------------|
|                                |            | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS                                         |
|                                |            |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                 |                                                 |
| EQUIP NO.:                     | 2CES*Z30E  |                                                 |                    |                    |                    |           |                |                 |                                                 |
| SPEC NO.:                      | E021P      | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES             |                                                 |
| SYSTEM:                        | CES-COMMON | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                          |
| ELECTRICAL SYSTEM              |            | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA              | NOTE 2                                          |
|                                |            | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA              |                                                 |
| TYPE: (DESCRIPTION)            |            | ACCIDENT                                        | 340                | 380 [R2]           | 1                  | 2         | TEST-SIM       | YES             |                                                 |
| COAX INSTR ELECTRICAL [R2]     |            | PRESS(PSIG)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                          |
| PENETRATION 300 VOLTS          |            | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA              |                                                 |
|                                |            | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA              |                                                 |
| MANUFACTURER: CONAX            |            | ACCIDENT                                        | 45                 | 69                 | 1                  | 2         | TEST-SIM       | YES             |                                                 |
|                                |            | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                          |
| MODEL NO.: 10001-01            |            | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA              |                                                 |
|                                |            | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA              |                                                 |
| SAFETY FUNCTION: - - -         |            | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA              |                                                 |
| PROVIDE CONTINUITY OF          |            | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                          |
| ELECTRICAL CIRCUITS AND        |            | NORM GAMMA                                      | 2.6E6              |                    | 1                  | 2         | TEST-SIM       | NA              |                                                 |
| CONTAINMENT INTEGRITY          |            | ACC GAMMA                                       | 3.1E7              | 1.10E8             | 1                  | 2         | TEST-SIM       | YES             | NOTE 4                                          |
| OP. CODE: A                    |            | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA              |                                                 |
|                                |            | ACC BETA                                        | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES             | NOTE 4                                          |
|                                |            | NEUTRON                                         | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA              |                                                 |
|                                |            | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA              |                                                 |
| ACCURACY - -                   |            | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA              |                                                 |
| SPEC: NA                       |            |                                                 |                    |                    |                    |           |                |                 |                                                 |
| DEMO: NA                       |            |                                                 |                    |                    |                    |           |                |                 |                                                 |
| ZONE NO.: PC240612             |            |                                                 |                    |                    |                    |           |                |                 |                                                 |
| SUBMERGENCE: NA                |            | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                 | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY: YES                     |            | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                 | SEE THE DOCUMENT REFERENCED.                    |
|                                |            | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                 | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
|                                |            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                 | DESIGN/AVERAGE.                                 |
|                                |            | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                 | 3.FOR OUTBOARD SIDE QUALIFICATION               |
|                                |            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                 | SEE PAGE 2: SINCE IT EMPLOYS SAME               |
|                                |            | FILE NO. CES-2                                  |                    |                    |                    |           |                |                 | MATERIALS (EXCEPT VITON) IT IS                  |
| DOCUMENTATION ACCEPTABILITY:   |            | 4. CALCULATION # 12177-EQS-19 (RADIATION) [R2]  |                    |                    |                    |           |                |                 | QUALIFIED TO THE ENVIRONMENTAL                  |
| ACCEPTABLE TO NUREG 0588,CAT I |            | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                 | CONDITIONS AT THE INBOARD SIDE;                 |
|                                |            | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                 | QUALIFIED PARAMETERS FOR VITON                  |
|                                |            | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                 | SEALINGS ENVELOPE SPECIFIED CON-                |
|                                |            | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                 | DITIONS - SEE CONAX REPORT                      |
|                                |            |                                                 |                    |                    |                    |           |                |                 | IPS-325.                                        |
| MAINT/SURVEILL - - -           |            |                                                 |                    |                    |                    |           |                |                 | 4.QUALIFIED 1.1E8 RADS COVERS GAMMA             |
| REFERENCE: NA                  |            |                                                 |                    |                    |                    |           |                |                 | AND NEUTRON DOSES; QUALIFIED                    |
|                                |            |                                                 |                    |                    |                    |           |                |                 | 9.4E8 RADS COVERS BETA DOSES.                   |
| QUALIFIED LIFE - - -           |            |                                                 |                    |                    |                    |           |                |                 |                                                 |
| (YEARS): 40                    |            |                                                 |                    |                    |                    |           |                |                 |                                                 |
| REFERENCE: 2                   |            |                                                 |                    |                    |                    |           |                |                 |                                                 |
|                                |            | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                 |                                                 |



QUAL REF #\_E021PBD\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |          |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|----------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS  |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |          |
| EQUIP NO.:            | 2CES*Z30E | =====                                      | =====              | =====              | =====              | =====     | =====          | =====          | =====    |
| SPEC NO.:             | E021P     | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |          |
|                       |           | TEMP (F):                                  | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1 |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2   |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             |          |
|                       |           | ACCIDENT                                   | 175                | 380 [R2]           | 1                  | 2         | TEST-SIM       | YES            | NOTE 3   |
|                       |           | PRESS (PSIG)                               | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1 |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |          |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |          |
|                       |           | ACCIDENT                                   | 2.8                | 69                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3   |
|                       |           | RH (%) :                                   | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1 |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |          |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |          |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3   |
|                       |           | RADIATION:                                 | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | - NOTE 1 |
|                       |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |          |
|                       |           | ACC GAMMA                                  | 5.3E7              | 1.10E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 3   |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |          |
|                       |           | ACC BETA                                   | 6.1E6 [R2]         |                    | 1                  | 2         | TEST-SIM       | YES            |          |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |          |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | NA                 | 7 [R2]    | TEST-SIM       | NA             | NOTE 3   |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |          |

ZONE NO.: SC240135  
SUBMERGENCE:  
SPRAY:  
EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





| EQUIPMENT DESCRIPTION           |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             | REMARKS |
|---------------------------------|------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                 |            | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO |         |
|                                 |            |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                      | 2CES-Z31E  |                                            |                 |                 |                    |           |             |             |         |
| SPEC NO.:                       | E021P      |                                            |                 |                 |                    |           |             |             |         |
| SYSTEM:                         | CES-COMMON |                                            |                 |                 |                    |           |             |             |         |
| ELECTRICAL SYSTEM               |            |                                            |                 |                 |                    |           |             |             |         |
| ITYPE: (DESCRIPTION)            |            |                                            |                 |                 |                    |           |             |             |         |
| ILVP ELECTRICAL                 |            |                                            |                 |                 |                    |           |             |             |         |
| PENETRATION 600 VOLTS           |            |                                            |                 |                 |                    |           |             |             |         |
| MANUFACTURER: CONAX             |            |                                            |                 |                 |                    |           |             |             |         |
| MODEL NO.:                      | 10005-03   |                                            |                 |                 |                    |           |             |             |         |
| SAFETY FUNCTION: - - -          |            |                                            |                 |                 |                    |           |             |             |         |
| PROVIDE CONTINUITY OF           |            |                                            |                 |                 |                    |           |             |             |         |
| ELECTRICAL CIRCUITS AND         |            |                                            |                 |                 |                    |           |             |             |         |
| CONTAINMENT INTEGRITY           |            |                                            |                 |                 |                    |           |             |             |         |
| OP. CODE: A                     |            |                                            |                 |                 |                    |           |             |             |         |
| ACCURACY - -                    |            |                                            |                 |                 |                    |           |             |             |         |
| SPEC: NA                        |            |                                            |                 |                 |                    |           |             |             |         |
| DEMO: NA                        |            |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.:                       | PC261641   |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE: NA                 |            |                                            |                 |                 |                    |           |             |             |         |
| SPRAY: YES                      |            |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:    |            |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588, CAT I |            |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -            |            |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: NA                   |            |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -            |            |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 40                     |            |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                    |            |                                            |                 |                 |                    |           |             |             |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2
- CALCULATION # 12177-EQS-019 (RADIATION) [R2]
- CALCULATION # 12177-EQS-64 (OPER EXT) [R2]
- VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]
- VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3. FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325.

4. QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
| EQUIP NO.:            | SPEC NO.: |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| 2CES-Z31E             | E021P     | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
|                       |           | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | 2         | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN+DATA        | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION                         | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                               | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                               |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CES-232E                          | OP. TIME:                                  | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.: E021P                               | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
| SYSTEM: CES-COMMON                            | NORMAL                                     | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| ELECTRICAL SYSTEM                             | ABNORMAL                                   | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)                           | ACCIDENT                                   | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |         |
| ILVP ELECTRICAL                               | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
| PENETRATION 600 VOLTS                         | NORMAL                                     | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: CONAX                           | ABNORMAL                                   | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
| MODEL NO.: 10005-04                           | ACCIDENT                                   | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
| SAFETY FUNCTION: - - -                        | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
| PROVIDE CONTINUITY OF                         | NORMAL                                     | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
| ELECTRICAL CIRCUITS AND                       | ABNORMAL                                   | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
| CONTAINMENT INTEGRITY                         | ACCIDENT                                   | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| OP. CODE: A                                   | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                               | NORM GAMMA                                 | 8.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                               | ACC GAMMA                                  | 3.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4  |
|                                               | NORM BETA                                  | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                               | ACC BETA                                   | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4  |
|                                               | NEUTRON                                    | 4.8E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
|                                               | SPRAY                                      | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
| ACCURACY - -                                  | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| SPEC: NA                                      |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                                      |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: PC261641                            |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                               |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: YES                                    |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:                  |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT I               |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -                          |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: NA                                 |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -                          |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                                   |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                                  |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION. |                                            |                    |                    |                    |           |                |                |         |

NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
3. FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325.  
4. QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.



NINE MILE POINT - UNIT 2  
DOCKET NUMBER 50-410

SYSTEM COMPONENT EVALUATION WORK SHEET

PAGE 2  
OF 2

QUAL REF #\_E021PBF\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z32E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        |         |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN+DATA        | NA             |         |
|                       |           | ISPRAY                                     | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





[illegible]



18-Feb-86

QUAL REF # E021PBG REV 2

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z33E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-          | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN+DATA        | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION           |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 |            | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |            |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                      | 2CES-Z34E  |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.:                       | E021P      |                                            |                    |                    |                    |           |                |                |         |
| SYSTEM:                         | CES-COMMON |                                            |                    |                    |                    |           |                |                |         |
| ELECTRICAL SYSTEM               |            |                                            |                    |                    |                    |           |                |                |         |
| TYPE: (DESCRIPTION)             |            |                                            |                    |                    |                    |           |                |                |         |
| CONTROL ELECTRICAL              |            |                                            |                    |                    |                    |           |                |                |         |
| PENETRATION 600 VOLTS           |            |                                            |                    |                    |                    |           |                |                |         |
| MANUFACTURER: CONAX             |            |                                            |                    |                    |                    |           |                |                |         |
| MODEL NO.:                      | 10004-09   |                                            |                    |                    |                    |           |                |                |         |
| SAFETY FUNCTION: - - -          |            |                                            |                    |                    |                    |           |                |                |         |
| PROVIDE CONTINUITY OF           |            |                                            |                    |                    |                    |           |                |                |         |
| ELECTRICAL CIRCUITS AND         |            |                                            |                    |                    |                    |           |                |                |         |
| CONTAINMENT INTEGRITY           |            |                                            |                    |                    |                    |           |                |                |         |
| OP. CODE: A                     |            |                                            |                    |                    |                    |           |                |                |         |
|                                 |            |                                            |                    |                    |                    |           |                |                |         |
| ACCURACY - - -                  |            |                                            |                    |                    |                    |           |                |                |         |
| SPEC: NA                        |            |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                        |            |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                       | PC261641   |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                 |            |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: YES                      |            |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |            |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0508, CAT I |            |                                            |                    |                    |                    |           |                |                |         |
|                                 |            |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: NA                   |            |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |            |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                     |            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |            |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2'
- CALCULATION # 12177-EQS-019 (RADIATION) [R2]
- CALCULATION # 12177-EQS-64 (OPER EXT) [R2]
- VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]
- VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325.

4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



18-Feb-86

QUAL REF #\_E021PBH\_ REV 2

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |          |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|----------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS  |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |          |
| EQUIP NO.:            | 2CES-Z34E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |          |
| SPEC NO.:             | E021P     | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | - NOTE 1 |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2   |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             |          |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3   |
|                       |           | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | - NOTE 1 |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |          |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |          |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3   |
|                       |           | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | - NOTE 1 |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |          |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |          |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3   |
|                       |           | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | - NOTE 1 |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |          |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3   |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |          |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |          |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN+DATA        | NA             |          |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |          |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |          |

ZONE NO.: SC261145  
SUBMERGENCE:  
SPRAY:  
EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





QUAL REF #\_E021PBI\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                   |
|---------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                           |
|                                 |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                   |
| EQUIP NO.: 2CES-Z35E            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                   |
| SPEC NO.: E021P                 | OP.TIME:                                                                                     | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                                                                                                   |
| SYSTEM: CES-COMMON              | TEMP (F):                                                                                    |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                            |
| ELECTRICAL SYSTEM               | NORMAL                                                                                       | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                            |
|                                 | ABNORMAL                                                                                     | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                   |
| ITYPE: (DESCRIPTION)            | ACCIDENT                                                                                     | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                   |
| INSTRUMENT ELECTRICAL           | PRESS(PSIG)                                                                                  |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                            |
| PENETRATION 300 VOLTS           | NORMAL                                                                                       | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                   |
|                                 | ABNORMAL                                                                                     | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                   |
| MANUFACTURER: CONAX             | ACCIDENT                                                                                     | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                   |
|                                 | RH (%)                                                                                       |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                            |
| MODEL NO.: 10003-02             | NORMAL                                                                                       | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                   |
|                                 | ABNORMAL                                                                                     | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                   |
| SAFETY FUNCTION: - - -          | ACCIDENT                                                                                     | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                   |
| PROVIDE CONTINUITY OF           | RADIATION:                                                                                   |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                            |
| ELECTRICAL CIRCUITS AND         | NORM GAMMA                                                                                   | 8.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                   |
| CONTAINMENT INTEGRITY           | ACC GAMMA                                                                                    | 3.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                            |
| OP. CODE: A                     | NORM BETA                                                                                    | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                   |
|                                 | ACC BETA                                                                                     | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                            |
|                                 | NEUTRON                                                                                      | 4.8E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                                                                                                   |
|                                 | SPRAY                                                                                        | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                   |
| ACCURACY - -                    | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                   |
| SPEC: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                   |
| DEMO: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                   |
| ZONE NO.: PC261641              |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                   |
| SUBMERGENCE: NA                 |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                   |
| SPRAY: YES                      |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                   |
|                                 | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                      |
|                                 | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                            |
|                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; |
|                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                    |                    |                    |           |                |                | 4. QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325.                                                              |
| DOCUMENTATION ACCEPTABILITY:    | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2]                                              |                    |                    |                    |           |                |                | 5. QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                 |
| ACCEPTABLE TO NUREG 0588, CAT I | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                    |                    |                    |           |                |                |                                                                                                                                                                   |
|                                 | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                    |                    |                    |           |                |                |                                                                                                                                                                   |
|                                 | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                   |
| MAINT/SURVEILL - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                   |
| REFERENCE: NA                   |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                   |
| QUALIFIED LIFE - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                   |
| (YEARS): 40                     |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                   |
| REFERENCE: 2                    |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                   |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                                                                                   |



18-Feb-86

QUAL REF #\_E021PBI\_\_\_\_\_ REV 2

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z35E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%) :                                   |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN+DATA        | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



QUAL REF #\_E021PBJ\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|---------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                              |
|                                 |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                      |
| EQUIP NO.: 2CES-Z36E            | OP. TIME:                                                                                    | 100 DAYS           | 100 DAYS           | 3                  | 2, 5 [R2] | AN + DATA      | YES            |                                                                                                                                                                                                                                                                      |
| SPEC NO.: E021P                 | TEMP (F):                                                                                    |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                               |
| SYSTEM: CES-COMMON              | NORMAL                                                                                       | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                               |
| ELECTRICAL SYSTEM               | ABNORMAL                                                                                     | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| TYPE: (DESCRIPTION)             | ACCIDENT                                                                                     | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                      |
| INSTRUMENT ELECTRICAL           | PRESS (PSIG)                                                                                 |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                               |
| PENETRATION 300 VOLTS           | NORMAL                                                                                       | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| MANUFACTURER: CONAX             | ABNORMAL                                                                                     | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| MODEL NO.: 10003-03             | ACCIDENT                                                                                     | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                      |
| SAFETY FUNCTION: - - -          | RH (%)                                                                                       |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                               |
| PROVIDE CONTINUITY OF           | NORMAL                                                                                       | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| ELECTRICAL CIRCUITS AND         | ABNORMAL                                                                                     | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| CONTAINMENT INTEGRITY           | ACCIDENT                                                                                     | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| OP. CODE: A                     | RADIATION:                                                                                   |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                               |
|                                 | NORM GAMMA                                                                                   | 8.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 | ACC GAMMA                                                                                    | 3.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                               |
|                                 | NORM BETA                                                                                    | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 | ACC BETA                                                                                     | 6.3E8              | 9.4E8 [R2]         | 1                  | 2, 6 [R2] | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                               |
|                                 | NEUTRON                                                                                      | 4.8E13             |                    | 1                  | 2, 4 [R2] | AN + DATA      | NA             |                                                                                                                                                                                                                                                                      |
|                                 | SPRAY                                                                                        | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| ACCURACY - -                    | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                      |
| SPEC: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| DEMO: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| ZONE NO.: PC261641              |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| SUBMERGENCE: NA                 | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                        |
| SPRAY: YES                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                              |
|                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                    |                    |                    |           |                |                | 3. FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325. |
|                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                    |                    |                    |           |                |                | 4. QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                    |
| DOCUMENTATION ACCEPTABILITY:    | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2]                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| ACCEPTABLE TO NUREG 0588, CAT I | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| MAINT/SURVEILL - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| REFERENCE: NA                   |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| QUALIFIED LIFE - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| (YEARS): 40                     |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| REFERENCE: 2                    |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |



18-Feb-86

QUAL REF # E021PBJ REV 2

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z36E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        |         |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | IRH (%):                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN+DATA        | NA             |         |
|                       |           | ISPRAY                                     | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO

SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.









18-Feb-86

QUAL REF #\_E021PBK\_ REV 2

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z37E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1. |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN+DATA        | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



17-Mar-86

QUAL REF #\_E021PBL\_ REV 2

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
|--------------------------------|----------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|----------|-------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | PARAMETER                                                                                    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |          | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                                             |
| EQUIP NO.: 2CES-Z38E           | OP.TIME:                                                                                     | 100 DAYS        | 100 DAYS        | 3                  | 2,5 [R2] | AN + DATA   | YES         |                                                                                                                                                                                                                                                                     |
| SPEC NO.: E021P                | TEMP (F):                                                                                    |                 |                 |                    |          |             |             | NOTE 1                                                                                                                                                                                                                                                              |
| SYSTEM: CES-COMMON             | NORMAL                                                                                       | 150/135         | 248             | 1                  | 2        | TEST-SIM    | NA          | NOTE 2                                                                                                                                                                                                                                                              |
| ELECTRICAL SYSTEM              | ABNORMAL                                                                                     | 190             | 248             | 1                  | 2        | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| TYPE: (DESCRIPTION)            | ACCIDENT                                                                                     | 340             | 370             | 1                  | 2        | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                     |
| CONTROL ELECTRICAL             | PRESS (PSIG)                                                                                 |                 |                 |                    |          |             |             | NOTE 1                                                                                                                                                                                                                                                              |
| PENETRATION 600 VOLTS          | NORMAL                                                                                       | 0.5 TO 1.0      | 1.0 [R2]        | 1                  | 2        | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| MANUFACTURER: CONAX            | ABNORMAL                                                                                     | 1.95            | 62              | 1                  | 2        | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| MODEL NO.: 10004-11            | ACCIDENT                                                                                     | 45              | 72 [R2]         | 1                  | 2        | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                     |
| SAFETY FUNCTION: - - -         | RH (%)                                                                                       |                 |                 |                    |          |             |             | NOTE 1                                                                                                                                                                                                                                                              |
| PROVIDE CONTINUITY OF          | NORMAL                                                                                       | 90              | 95              | 1                  | 2        | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| ELECTRICAL CIRCUITS AND        | ABNORMAL                                                                                     | 90              | 95 [R2]         | 1                  | 2        | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| CONTAINMENT INTEGRITY          | ACCIDENT                                                                                     | STEAM           | STEAM           | 1                  | 2        | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| OP. CODE: A                    | RADIATION:                                                                                   |                 |                 |                    |          |             |             | NOTE 1                                                                                                                                                                                                                                                              |
|                                | NORM GAMMA                                                                                   | 8.0E6           |                 | 1                  | 2        | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
|                                | ACC GAMMA                                                                                    | 3.3E7           | 1.285E8         | 1                  | 2        | TEST-SIM    | YES         | NOTE 4                                                                                                                                                                                                                                                              |
|                                | NORM BETA                                                                                    | 6.8E5           |                 | 1                  | 2        | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
|                                | ACC BETA                                                                                     | 6.3E8           | 9.4E8 [R2]      | 1                  | 2,6 [R2] | TEST-SIM    | YES         | NOTE 4                                                                                                                                                                                                                                                              |
|                                | NEUTRON                                                                                      | 4.8E13          |                 | 1                  | 2,4 [R2] | AN + DATA   | NA          |                                                                                                                                                                                                                                                                     |
|                                | SPRAY                                                                                        | YES             | YES [R2]        | 1                  | 7 [R2]   | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                     |
| ACCURACY - -                   | SUBMERGENCE                                                                                  | NA              | NA              | NA                 | NA       | NA          | NA          |                                                                                                                                                                                                                                                                     |
| SPEC: NA                       |                                                                                              |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
| DEMO: NA                       |                                                                                              |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
| ZONE NO.: PC261641             |                                                                                              |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
| SUBMERGENCE: NA                |                                                                                              |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
| SPRAY: YES                     |                                                                                              |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
| DOCUMENTATION ACCEPTABILITY:   | DOCUMENT REFERENCE:                                                                          |                 |                 |                    |          |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                        |
| ACCEPTABLE TO NUREG 0588,CAT I | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                 |                 |                    |          |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                              |
|                                | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                 |                 |                    |          |             |             | 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325. |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                 |                 |                    |          |             |             | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                    |
|                                | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2]                                              |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
|                                | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
|                                | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
|                                | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
| MAINT/SURVEILL - - -           |                                                                                              |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
| REFERENCE: NA                  |                                                                                              |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
| QUALIFIED LIFE - - -           |                                                                                              |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
| (YEARS): 40                    |                                                                                              |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
| REFERENCE: 2                   |                                                                                              |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                 |                 |                    |          |             |             |                                                                                                                                                                                                                                                                     |



NINE MILE POINT - UNIT 2  
DOCKET NUMBER 50-410

SYSTEM COMPONENT EVALUATION WORK SHEET

PAGE 2  
OF 2

QUAL REF #\_E021PBL\_\_\_\_. REV 2

17-Mar-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z38E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        |         |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





19-Feb-86

QUAL REF #\_E021PBM REV 2

| EQUIPMENT DESCRIPTION           |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|---------------------------------|------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |            | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                              |
|                                 |            |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                      |
| EQUIP NO.:                      | 2CES-Z39E  | OP.TIME:                                                                                     | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                                                                                                                                                                                                      |
| SPEC NO.:                       | E021P      | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
| SYSTEM:                         | CES-COMMON | NORMAL                                                                                       | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                               |
| ELECTRICAL SYSTEM               |            | ABNORMAL                                                                                     | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| TYPE: (DESCRIPTION)             |            | ACCIDENT                                                                                     | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                      |
| INSTRUMENT ELECTRICAL           |            | PRESS (PSIG)                                                                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
| PENETRATION 300 VOLTS           |            | NORMAL                                                                                       | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| MANUFACTURER: CONAX             |            | ABNORMAL                                                                                     | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| MODEL NO.:                      | 10003-04   | ACCIDENT                                                                                     | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                      |
| SAFETY FUNCTION: - - -          |            | RH (%):                                                                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
| PROVIDE CONTINUITY OF           |            | NORMAL                                                                                       | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| ELECTRICAL CIRCUITS AND         |            | ABNORMAL                                                                                     | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| CONTAINMENT INTEGRITY           |            | ACCIDENT                                                                                     | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| OP. CODE: A                     |            | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
|                                 |            | NORM GAMMA                                                                                   | 8.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 |            | ACC GAMMA                                                                                    | 3.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                               |
|                                 |            | NORM BETA                                                                                    | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 |            | ACC BETA                                                                                     | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                               |
|                                 |            | NEUTRON                                                                                      | 4.8E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                                                                                                                                                                                                      |
|                                 |            | SPRAY                                                                                        | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| ACCURACY - -                    |            | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                      |
| SPEC: NA                        |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| DEMO: NA                        |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| ZONE NO.:                       | PC261641   |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| SUBMERGENCE:                    | NA         | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                        |
| SPRAY:                          | YES        | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                              |
|                                 |            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                    |                    |                    |           |                |                | 3. FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325. |
|                                 |            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                    |                    |                    |           |                |                | 4. QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                    |
| DOCUMENTATION ACCEPTABILITY:    |            | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2]                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| ACCEPTABLE TO NUREG 0588, CAT 1 |            | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 |            | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 |            | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| MAINT/SURVEILL - - -            |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| REFERENCE: NA                   |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| QUALIFIED LIFE - - -            |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| (YEARS): 40                     |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| REFERENCE: 2                    |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 |            | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |



NINE MILE POINT - UNIT 2  
DOCKET NUMBER 50-410

SYSTEM COMPONENT EVALUATION WORK SHEET

PAGE 2  
OF 2

QUAL REF #\_E021PBM\_\_\_\_ REV 2

19-Feb-86

19-FEB-88

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z39E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        |         |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2,5 [R2]  | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN+DATA        | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CES-Z40E           |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.: E021P                |                                            |                    |                    |                    |           |                |                |         |
| SYSTEM: CES-COMMON             |                                            |                    |                    |                    |           |                |                |         |
| ELECTRICAL SYSTEM              |                                            |                    |                    |                    |           |                |                |         |
| TYPE: (DESCRIPTION)            |                                            |                    |                    |                    |           |                |                |         |
| CONTROL ELECTRICAL             |                                            |                    |                    |                    |           |                |                |         |
| PENETRATION 600 VOLTS          |                                            |                    |                    |                    |           |                |                |         |
| MANUFACTURER: CONAX            |                                            |                    |                    |                    |           |                |                |         |
| MODEL NO.: 10003-04            |                                            |                    |                    |                    |           |                |                |         |
| SAFETY FUNCTION: - - -         |                                            |                    |                    |                    |           |                |                |         |
| PROVIDE CONTINUITY OF          |                                            |                    |                    |                    |           |                |                |         |
| ELECTRICAL CIRCUITS AND        |                                            |                    |                    |                    |           |                |                |         |
| CONTAINMENT INTEGRITY          |                                            |                    |                    |                    |           |                |                |         |
| OP. CODE: A                    |                                            |                    |                    |                    |           |                |                |         |
| ACCURACY - - -                 |                                            |                    |                    |                    |           |                |                |         |
| SPEC: NA                       |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                       |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.: PC261641             |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: YES                     |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: NA                  |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                    |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |                                            |                    |                    |                    |           |                |                |         |

**NOTES:** 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.  
 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.  
 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325.  
 4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



QUAL REF #\_E021PBN\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z40E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN+DATA        | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|--------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.: 2CES-Z41E           |                                                 |                    |                    |                    |           |                |                |                                                 |
| SPEC NO.: E021P                | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                 |
| SYSTEM: CES-COMMON             | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| ELECTRICAL SYSTEM              | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                          |
|                                | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| TYPE: (DESCRIPTION)            | ACCIDENT                                        | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| CONTROL ELECTRICAL             | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| PENETRATION 600 VOLTS          | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| MANUFACTURER: CONAX            | ACCIDENT                                        | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                 |
|                                | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| MODEL NO.: 10004-12            | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| SAFETY FUNCTION: - - -         | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| PROVIDE CONTINUITY OF          | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| ELECTRICAL CIRCUITS AND        | NORM GAMMA                                      | 6.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| CONTAINMENT INTEGRITY          | ACC GAMMA                                       | 2.6E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                          |
| OP. CODE: A                    | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                | ACC BETA                                        | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                          |
|                                | NEUTRON                                         | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                 |
|                                | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                 |
| ACCURACY - -                   | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| SPEC: NA                       |                                                 |                    |                    |                    |           |                |                |                                                 |
| DEMO: NA                       |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.: PC261649             |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE: NA                | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY: YES                     | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
|                                | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
|                                | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | DESIGN/AVERAGE.                                 |
|                                | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION               |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: LATER |                    |                    |                    |           |                |                | SEE PAGE 2: SINCE IT EMPLOYS SAME               |
|                                | FILE NO. CES-2                                  |                    |                    |                    |           |                |                | MATERIALS (EXCEPT VITON) IT IS                  |
| DOCUMENTATION ACCEPTABILITY:   | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2] |                    |                    |                    |           |                |                | IT IS QUALIFIED TO THE ENVIRONMENTAL            |
| ACCEPTABLE TO NUREG 0588,CAT I | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                | CONDITIONS AT THE INBOARD SIDE;                 |
|                                | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                | QUALIFIED PARAMETERS FOR VITON                  |
|                                | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                | SEALINGS ENVELOPE SPECIFIED CON-                |
|                                | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                | DITIONS - SEE CONAX REPORT                      |
|                                |                                                 |                    |                    |                    |           |                |                | IPS-325.                                        |
| MAINT/SURVEILL - - -           |                                                 |                    |                    |                    |           |                |                | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA           |
| REFERENCE: NA                  |                                                 |                    |                    |                    |           |                |                | AND NEUTRON DOSES; QUALIFIED                    |
|                                |                                                 |                    |                    |                    |           |                |                | 9.4E8 RADS COVERS BETA DOSES.                   |
| QUALIFIED LIFE - - -           |                                                 |                    |                    |                    |           |                |                |                                                 |
| (YEARS): 40                    |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                   |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                |                                                 |



QUAL REF #\_E021PBO\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|-----------------------|-----------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                       |           |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:            | 2CES-Z41E | OP.TIME:                                   | 100 DAYS        | 100 DAYS        | 3                  | 2,5 [R2]  | AN + DATA   | YES         |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                 |                 |                    |           |             |             |         |
|                       |           | NORMAL                                     | 104/85          | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1  |
|                       |           | ABNORMAL                                   | 87              | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                       |           | ACCIDENT                                   | 200             | 370             | 1                  | 2         | TEST-SIM    | YES         | NOTE 3  |
|                       |           | PRESS(PSIG)                                |                 |                 |                    |           |             |             | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG     | 1.0 [R2]        | 1                  | 2         | TEST-SIM    | NA          |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG     | 62              | 1                  | 2         | TEST-SIM    | NA          |         |
|                       |           | ACCIDENT                                   | 2.8             | 72 [R2]         | 1                  | 2         | TEST-SIM    | YES         | NOTE 3  |
|                       |           | RH (%)                                     |                 |                 |                    |           |             |             | NOTE 1  |
|                       |           | NORMAL                                     | 50              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
|                       |           | ABNORMAL                                   | 50              | 95 [R2]         | 1                  | 2         | TEST-SIM    | NA          |         |
|                       |           | ACCIDENT                                   | 100             | 100             | 1                  | 2         | TEST-SIM    | NA          | NOTE 3  |
|                       |           | RADIATION:                                 |                 |                 |                    |           |             |             | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6           |                 | 1                  | 2         | TEST-SIM    | NA          |         |
|                       |           | ACC GAMMA                                  | 5.9E7           | 1.285E8         | 1                  | 2         | TEST-SIM    | YES         | NOTE 3  |
|                       |           | NORM BETA                                  | NA              |                 | 1                  | NA        | NA          | NA          |         |
|                       |           | ACC BETA                                   | 6.1E6           |                 | 1                  | 2         | TEST-SIM    | YES         |         |
|                       |           | NEUTRON                                    | 4.9E13          |                 | 1                  | 2,4 [R2]  | AN+DATA     | NA          |         |
|                       |           | SPRAY                                      | NA              | YES [R2]        | 1                  | 7 [R2]    | TEST-SIM    | NA          |         |
|                       |           | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |

ZONE NO.: SC261145

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



18-Feb-86

QUAL REF #\_E021PBP\_ REV 2

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                                                 |
|--------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------------------------------------------------------------------------------|
|                                | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                         |
|                                |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                 |
| EQUIP NO.: 2CES-Z42E           | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                 |
| SPEC NO.: E021P                | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                          |
| SYSTEM: CES-COMMON             | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                          |
| ELECTRICAL SYSTEM              | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
| TYPE: (DESCRIPTION)            | ACCIDENT                                        | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                 |
| INSTRUMENT ELECTRICAL          | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                          |
| PENETRATION 300 VOLTS          | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
| MANUFACTURER: CONAX            | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
|                                | ACCIDENT                                        | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                 |
| MODEL NO.: 10003-05            | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                          |
|                                | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
| SAFETY FUNCTION: - - -         | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
| PROVIDE CONTINUITY OF          | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
| ELECTRICAL CIRCUITS AND        | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                          |
| CONTAINMENT INTEGRITY          | NORM GAMMA                                      | 6.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
| OP. CODE: A                    | ACC GAMMA                                       | 2.6E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                          |
|                                | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                 |
|                                | ACC BETA                                        | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                          |
|                                | NEUTRON                                         | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                 |
| ACCURACY - -                   | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                 |
| SPEC: NA                       | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                 |
| DEMO: NA                       |                                                 |                    |                    |                    |           |                |                |                                                                                 |
| ZONE NO.: PC261649             |                                                 |                    |                    |                    |           |                |                |                                                                                 |
| SUBMERGENCE: NA                | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED. |
| SPRAY: YES                     | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX<br>DESIGN/AVERAGE.                       |
|                                | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION<br>SEE PAGE 2: SINCE IT EMPLOYS SAME          |
|                                | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | MATERIALS (EXCEPT VITON) IT IS                                                  |
|                                | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                | QUALIFIED TO THE ENVIRONMENTAL                                                  |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                | CONDITIONS AT THE INBOARD SIDE;                                                 |
|                                | FILE NO. CES-2                                  |                    |                    |                    |           |                |                | QUALIFIED PARAMETERS FOR VITON                                                  |
| DOCUMENTATION ACCEPTABILITY:   | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2] |                    |                    |                    |           |                |                | SEALINGS ENVELOPE SPECIFIED CON-                                                |
| ACCEPTABLE TO NUREG 0588,CAT I | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                | DITIONS - SEE CONAX REPORT                                                      |
|                                | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                | IPS-325.                                                                        |
|                                | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                | 4. QUALIFIED 1.285E8 RADS COVERS GAMMA                                          |
|                                | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                | AND NEUTRON DOSES; QUALIFIED                                                    |
|                                |                                                 |                    |                    |                    |           |                |                | 9.4E8 RADS COVERS BETA DOSES.                                                   |
| MAINT/SURVEILL - - -           |                                                 |                    |                    |                    |           |                |                |                                                                                 |
| REFERENCE: NA                  |                                                 |                    |                    |                    |           |                |                |                                                                                 |
| QUALIFIED LIFE - - -           |                                                 |                    |                    |                    |           |                |                |                                                                                 |
| (YEARS): 40                    |                                                 |                    |                    |                    |           |                |                |                                                                                 |
| REFERENCE: 2                   |                                                 |                    |                    |                    |           |                |                |                                                                                 |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                |                                                                                 |













18-Feb-86

QUAL REF #\_E021PBQ\_\_\_ REV 2

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z43E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN+DATA        | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION          |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                 |                                                 |
|--------------------------------|------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|-------------------------------------------------|
|                                |            | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS                                         |
|                                |            |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                 |                                                 |
| EQUIP NO.:                     | 2CES-Z44E  |                                                 |                    |                    |                    |           |                |                 |                                                 |
| SPEC NO.:                      | E021P      | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES             |                                                 |
| SYSTEM:                        | CES-COMMON | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                          |
| ELECTRICAL SYSTEM              |            | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA              | NOTE 2                                          |
|                                |            | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA              |                                                 |
| ITYPE: (DESCRIPTION)           |            | ACCIDENT                                        | 340                | 370                | 1                  | 2         | TEST-SIM       | YES             |                                                 |
| INSTRUMENT ELECTRICAL          |            | PRESS (PSIG)                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                          |
| PENETRATION 300 VOLTS          |            | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA              |                                                 |
|                                |            | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA              |                                                 |
| MANUFACTURER: CONAX            |            | ACCIDENT                                        | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES             |                                                 |
|                                |            | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                          |
| MODEL NO.:                     | 10003-06   | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA              |                                                 |
|                                |            | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA              |                                                 |
| SAFETY FUNCTION: - - -         |            | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA              |                                                 |
| PROVIDE CONTINUITY OF          |            | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -         | NOTE 1                                          |
| ELECTRICAL CIRCUITS AND        |            | NORM GAMMA                                      | 6.9E6              |                    | 1                  | 2         | TEST-SIM       | NA              |                                                 |
| CONTAINMENT INTEGRITY          |            | ACC GAMMA                                       | 2.6E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES             | NOTE 4                                          |
| OP. CODE: A                    |            | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA              |                                                 |
|                                |            | ACC BETA                                        | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES             | NOTE 4                                          |
|                                |            | NEUTRON                                         | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA              |                                                 |
|                                |            | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA              |                                                 |
| ACCURACY - -                   |            | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA              |                                                 |
| SPEC: NA                       |            |                                                 |                    |                    |                    |           |                |                 |                                                 |
| DEMO: NA                       |            |                                                 |                    |                    |                    |           |                |                 |                                                 |
| ZONE NO.:                      | PC261649   |                                                 |                    |                    |                    |           |                |                 |                                                 |
| SUBMERGENCE:                   | NA         | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                 | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY:                         | YES        | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                 | SEE THE DOCUMENT REFERENCED.                    |
|                                |            | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                 | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
|                                |            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                 | DESIGN/AVERAGE.                                 |
|                                |            | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                 | 3.FOR OUTBOARD SIDE QUALIFICATION               |
|                                |            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                 | SEE PAGE 2: SINCE IT EMPLOYS SAME               |
|                                |            | FILE NO. CES-2                                  |                    |                    |                    |           |                |                 | MATERIALS (EXCEPT VITON) IT IS                  |
| DOCUMENTATION ACCEPTABILITY:   |            | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2] |                    |                    |                    |           |                |                 | QUALIFIED TO THE ENVIRONMENTAL                  |
| ACCEPTABLE TO NUREG 0588,CAT I |            | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                 | CONDITIONS AT THE INBOARD SIDE;                 |
|                                |            | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                 | QUALIFIED PARAMETERS FOR VITON                  |
|                                |            | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                 | SEALINGS ENVELOPE SPECIFIED CON-                |
|                                |            | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                 | DITIONS - SEE CONAX REPORT                      |
|                                |            |                                                 |                    |                    |                    |           |                |                 | IPS-325.                                        |
| MAINT/SURVEILL - - -           |            |                                                 |                    |                    |                    |           |                |                 | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA           |
| REFERENCE: NA                  |            |                                                 |                    |                    |                    |           |                |                 | AND NEUTRON DOSES; QUALIFIED                    |
|                                |            |                                                 |                    |                    |                    |           |                |                 | 9.4E8 RADS COVERS BETA DOSES.                   |
| QUALIFIED LIFE - - -           |            |                                                 |                    |                    |                    |           |                |                 |                                                 |
| (YEARS): 40                    |            |                                                 |                    |                    |                    |           |                |                 |                                                 |
| REFERENCE: 2                   |            |                                                 |                    |                    |                    |           |                |                 |                                                 |
|                                |            | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                 |                                                 |



QUAL REF # E021PBR REV 2

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z44E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN+DATA        | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





QUAL REF #\_E021PBS\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION          |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------|------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                |            | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                |            |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| =====                          |            | =====                                      | =====              | =====              | =====              | =====     | =====          | =====          | =====   |
| EQUIP NO.:                     | 2CES-Z45E  | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:                      | E021P      | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| SYSTEM:                        | CES-COMMON | NORMAL                                     | 150/135            | 153                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
| ELECTRICAL SYSTEM              |            | ABNORMAL                                   | 190                | 250 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
| TYPE: (DESCRIPTION)            |            | ACCIDENT                                   | 340                | 400 [R2]           | 1                  | 2         | TEST-SIM       | YES            |         |
| MVP ELECTRICAL                 |            | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| PENETRATION 15KV               |            | NORMAL                                     | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
| MANUFACTURER: CONAX            |            | ABNORMAL                                   | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
| MODEL NO.:                     | 10000-01   | ACCIDENT                                   | 45                 | 70 [R2]            | 1                  | 2         | TEST-SIM       | YES            |         |
| SAFETY FUNCTION: - - -         |            | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
| PROVIDE CONTINUITY OF          |            | NORMAL                                     | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
| ELECTRICAL CIRCUITS AND        |            | ABNORMAL                                   | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
| CONTAINMENT INTEGRITY          |            | ACCIDENT                                   | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |         |
| OP. CODE: A                    |            | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                                |            | NORM GAMMA                                 | 6.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |            | ACC GAMMA                                  | 2.6E7              | 1.19E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 4  |
|                                |            | NORM BETA                                  | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                |            | ACC BETA                                   | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4  |
|                                |            | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
|                                |            | SPRAY                                      | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
| ACCURACY - -                   |            | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| =====                          |            | =====                                      |                    |                    |                    |           |                |                |         |
| SPEC: NA                       |            |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                       |            |                                            |                    |                    |                    |           |                |                |         |
|                                |            |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                      | PC261649   |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                   | NA         |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                         | YES        |                                            |                    |                    |                    |           |                |                |         |
|                                |            |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:   |            |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588,CAT I |            |                                            |                    |                    |                    |           |                |                |         |
|                                |            |                                            |                    |                    |                    |           |                |                |         |
|                                |            |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -           |            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: NA                  |            |                                            |                    |                    |                    |           |                |                |         |
|                                |            |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -           |            |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                    |            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                   |            |                                            |                    |                    |                    |           |                |                |         |
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NINE MILE POINT - UNIT 2  
DOCKET NUMBER 50-410

SYSTEM COMPONENT EVALUATION WORK SHEET

PAGE 2  
OF 2

QUAL REF # E021PBS REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION                   | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                         | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                         |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CES-Z45E<br>SPEC NO.: E021P | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2, 5 [R2] | AN + DATA      | YES            |         |
|                                         | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                                         | NORMAL                                     | 104/85             | 130                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                         | ABNORMAL                                   | 87                 | 130                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                         | ACCIDENT                                   | 200                | 400 [R2]           | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                         | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                         | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                                         | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                         | ACCIDENT                                   | 2.8                | 70                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                         | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                                         | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                         | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                                         | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                                         | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                         | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                         | ACC GAMMA                                  | 5.9E7              | 1.19E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                         | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                         | ACC BETA                                   | 6.1E6 [R2]         |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                                         | NEUTRON                                    | 4.9E13             |                    | 1                  | 2, 4 [R2] | AN+DATA        | NA             |         |
|                                         | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                                         | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION                                               |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                 |         |
|---------------------------------------------------------------------|------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|-----------------|---------|
|                                                                     |            | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN/<br>DEMO | REMARKS |
|                                                                     |            |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                 |         |
| EQUIP NO.:                                                          | 2CES-Z46E  |                                            |                    |                    |                    |           |                |                 |         |
| SPEC NO.:                                                           | E021P      |                                            |                    |                    |                    |           |                |                 |         |
| SYSTEM:                                                             | CES-COMMON |                                            |                    |                    |                    |           |                |                 |         |
| ELECTRICAL SYSTEM                                                   |            |                                            |                    |                    |                    |           |                |                 |         |
| TYPE: (DESCRIPTION)                                                 |            |                                            |                    |                    |                    |           |                |                 |         |
| IMPENETRATION 15KV                                                  |            |                                            |                    |                    |                    |           |                |                 |         |
| MANUFACTURER: CONAX                                                 |            |                                            |                    |                    |                    |           |                |                 |         |
| MODEL NO.:                                                          | 10000-01   |                                            |                    |                    |                    |           |                |                 |         |
| SAFETY FUNCTION: - - -                                              |            |                                            |                    |                    |                    |           |                |                 |         |
| PROVIDE CONTINUITY OF ELECTRICAL CIRCUITS AND CONTAINMENT INTEGRITY |            |                                            |                    |                    |                    |           |                |                 |         |
| OP. CODE: A                                                         |            |                                            |                    |                    |                    |           |                |                 |         |
| ACCURACY - -                                                        |            |                                            |                    |                    |                    |           |                |                 |         |
| SPEC: NA                                                            |            |                                            |                    |                    |                    |           |                |                 |         |
| DEMO: NA                                                            |            |                                            |                    |                    |                    |           |                |                 |         |
| ZONE NO.:                                                           | PC261649   |                                            |                    |                    |                    |           |                |                 |         |
| SUBMERGENCE: NA                                                     |            |                                            |                    |                    |                    |           |                |                 |         |
| SPRAY: YES                                                          |            |                                            |                    |                    |                    |           |                |                 |         |
| DOCUMENTATION ACCEPTABILITY:<br>ACCEPTABLE TO NUREG 0588,CAT I      |            |                                            |                    |                    |                    |           |                |                 |         |
| MAINT/SURVEILL - - -<br>REFERENCE: NA                               |            |                                            |                    |                    |                    |           |                |                 |         |
| QUALIFIED LIFE - - -<br>(YEARS): 40<br>REFERENCE: 2                 |            |                                            |                    |                    |                    |           |                |                 |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION



18-Feb-86

QUAL REF #\_E021PBT\_ REV 2

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z46E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/85             | 130                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 87                 | 130                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 200                | 400 [R2]           | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | NA             | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 70                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | NA             | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.19E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6 [R2]         |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        |                | NA             |         |

ZONE NO.: SC261145  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





QUAL REF #\_E021PBU\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION          | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                  |
|--------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                          |
|                                |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                  |
| EQUIP NO.: 2CES-247E           | OP.TIME:                                                                                     | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                                                                                                  |
| SPEC NO.: E021P                | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                           |
| SYSTEM: CES-COMMON             | NORMAL                                                                                       | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                           |
| ELECTRICAL SYSTEM              | ABNORMAL                                                                                     | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                  |
| ITYPE: (DESCRIPTION)           | ACCIDENT                                                                                     | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                  |
| ILVP ELECTRICAL                | PRESS (PSIG)                                                                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                           |
| PENETRATION 600 VOLTS          | NORMAL                                                                                       | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                  |
| MANUFACTURER: CONAX            | ABNORMAL                                                                                     | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                  |
| MODEL NO.: 10005-05            | ACCIDENT                                                                                     | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                  |
| SAFETY FUNCTION: - - -         | RH (%):                                                                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                           |
| PROVIDE CONTINUITY OF          | NORMAL                                                                                       | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                  |
| ELECTRICAL CIRCUITS AND        | ABNORMAL                                                                                     | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                  |
| CONTAINMENT INTEGRITY          | ACCIDENT                                                                                     | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                  |
| OP. CODE: A                    | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                           |
|                                | NORM GAMMA                                                                                   | 8.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                  |
|                                | ACC GAMMA                                                                                    | 3.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                           |
|                                | NORM BETA                                                                                    | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                  |
|                                | ACC BETA                                                                                     | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                           |
|                                | NEUTRON                                                                                      | 4.8E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                                                                                                  |
|                                | SPRAY                                                                                        | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                  |
| ACCURACY - -                   | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             |                |                                                                                                                                                                  |
| SPEC: NA                       |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                  |
| DEMO: NA                       |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                  |
| ZONE NO.: PC261641             |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                  |
| SUBMERGENCE: NA                | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                     |
| SPRAY: YES                     | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                           |
|                                | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2:SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; |
|                                | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                    |                    |                    |           |                |                | 4. QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS:SEE CONAX REPORT IPS-325                                                                |
| DOCUMENTATION ACCEPTABILITY:   | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2]                                              |                    |                    |                    |           |                |                | 4. QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES;QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                 |
| ACCEPTABLE TO NUREG 0588,CAT I | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                    |                    |                    |           |                |                |                                                                                                                                                                  |
|                                | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                    |                    |                    |           |                |                |                                                                                                                                                                  |
|                                | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                  |
| MAINT/SURVEILL - - -           |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                  |
| REFERENCE: NA                  |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                  |
| QUALIFIED LIFE - - -           |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                  |
| (YEARS): 40                    |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                  |
| REFERENCE: 2                   |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                  |
|                                | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                                                                                  |



| EQUIPMENT DESCRIPTION    |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                          |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                          |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:               | 2CES-Z47E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:                | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                          |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                          |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                          |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                          |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |           | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                          |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                          |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                          |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                          |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                          |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
|                          |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                          |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                |           | SC261145                                   |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:             |           |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                   |           |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO |           |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY     |           |                                            |                    |                    |                    |           |                |                |         |
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| EQUIPMENT DESCRIPTION           |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|---------------------------------|------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                 |            | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                 |            |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                      | 2CES-Z49E  |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.:                       | E021P      |                                            |                    |                    |                    |           |                |                |         |
| SYSTEM:                         | CES-COMMON |                                            |                    |                    |                    |           |                |                |         |
| ELECTRICAL SYSTEM               |            |                                            |                    |                    |                    |           |                |                |         |
| TYPE: (DESCRIPTION)             |            |                                            |                    |                    |                    |           |                |                |         |
| ILVP ELECTRICAL                 |            |                                            |                    |                    |                    |           |                |                |         |
| PENETRATION 600 VOLTS           |            |                                            |                    |                    |                    |           |                |                |         |
| MANUFACTURER: CONAX             |            |                                            |                    |                    |                    |           |                |                |         |
| MODEL NO.:                      | 10005-06   |                                            |                    |                    |                    |           |                |                |         |
| SAFETY FUNCTION: - - -          |            |                                            |                    |                    |                    |           |                |                |         |
| PROVIDE CONTINUITY OF           |            |                                            |                    |                    |                    |           |                |                |         |
| ELECTRICAL CIRCUITS AND         |            |                                            |                    |                    |                    |           |                |                |         |
| CONTAINMENT INTEGRITY           |            |                                            |                    |                    |                    |           |                |                |         |
| OP. CODE: A                     |            |                                            |                    |                    |                    |           |                |                |         |
| ACCURACY - -                    |            |                                            |                    |                    |                    |           |                |                |         |
| SPEC: NA                        |            |                                            |                    |                    |                    |           |                |                |         |
| DEMO: NA                        |            |                                            |                    |                    |                    |           |                |                |         |
| ZONE NO.:                       | PC261649   |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE: NA                 |            |                                            |                    |                    |                    |           |                |                |         |
| SPRAY: YES                      |            |                                            |                    |                    |                    |           |                |                |         |
| DOCUMENTATION ACCEPTABILITY:    |            |                                            |                    |                    |                    |           |                |                |         |
| ACCEPTABLE TO NUREG 0588, CAT 1 |            |                                            |                    |                    |                    |           |                |                |         |
| MAINT/SURVEILL - - -            |            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: NA                   |            |                                            |                    |                    |                    |           |                |                |         |
| QUALIFIED LIFE - - -            |            |                                            |                    |                    |                    |           |                |                |         |
| (YEARS): 40                     |            |                                            |                    |                    |                    |           |                |                |         |
| REFERENCE: 2                    |            |                                            |                    |                    |                    |           |                |                |         |

DOCUMENT REFERENCE:

- EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]
- VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]
- EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2
- CALCULATION # 12177-EQS-019 (RADIATION) [R2]
- CALCULATION # 12177-EQS-64 (OPER EXT) [R2]
- VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]
- VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]

NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.

2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.

3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325.

4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



QUAL REF #\_E021PBV REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION    |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                          |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                          |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:               | 2CES-Z49E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:                | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                          |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                          |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                          |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                          |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |           | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                          |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                          |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                          |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                          |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                          |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                          |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                          |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN+DATA        | NA             |         |
|                          |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                          |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                |           | SC261145                                   |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:             |           |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                   |           |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO |           |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY     |           |                                            |                    |                    |                    |           |                |                |         |
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## ENVIRONMENTAL CONDITIONS AND QUALIFICATION

| EQUIPMENT DESCRIPTION   | PARAMETER                                       | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                         |
|-------------------------|-------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|-------------------------------------------------|
|                         |                                                 |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                 |
| EQUIP NO.: 2CES*Z51E    | OP.TIME:                                        | 100 DAYS        | 100 DAYS        | 3                  | 2,5 [R2]  | AN + DATA   | YES         |                                                 |
| SPEC NO.: E021P         | TEMP (F):                                       | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                          |
| SYSTEM: CES-COMMON      | NORMAL                                          | 150/135         | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2                                          |
| ELECTRICAL SYSTEM       | ABNORMAL                                        | 190             | 248             | 1                  | 2         | TEST-SIM    | NA          |                                                 |
| TYPE: (DESCRIPTION)     | ACCIDENT                                        | 340             | 370             | 1                  | 2         | TEST-SIM    | YES         |                                                 |
| CONTROL ELECTRICAL      | PRESS(PSIG)                                     | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                          |
| PENETRATION 600 VOLTS   | NORMAL                                          | 0.5 TO 1.0      | 1.0 [R2]        | 1                  | 2         | TEST-SIM    | NA          |                                                 |
| MANUFACTURER: CONAX     | ABNORMAL                                        | 1.95            | 62              | 1                  | 2         | TEST-SIM    | NA          |                                                 |
| MODEL NO.: 10006-02.    | ACCIDENT                                        | 45              | 72 [R2]         | 1                  | 2         | TEST-SIM    | YES         |                                                 |
| SAFETY FUNCTION: - - -  | RH (%):                                         | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                          |
| PROVIDE CONTINUITY OF   | NORMAL                                          | 90              | 95              | 1                  | 2         | TEST-SIM    | NA          |                                                 |
| ELECTRICAL CIRCUITS AND | ABNORMAL                                        | 90              | 95 [R2]         | 1                  | 2         | TEST-SIM    | NA          |                                                 |
| CONTAINMENT INTEGRITY   | ACCIDENT                                        | STEAM           | STEAM           | 1                  | 2         | TEST-SIM    | NA          |                                                 |
| IOP. CODE: A            | RADIATION:                                      | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                          |
|                         | NORM GAMMA                                      | 6.3E6           |                 | 1                  | 2         | TEST-SIM    | NA          |                                                 |
|                         | ACC GAMMA                                       | 4.2E7           | 1.285E8         | 1                  | 2         | TEST-SIM    | YES         | NOTE 4                                          |
|                         | NORM BETA                                       | 6.8E5           |                 | 1                  | 2         | TEST-SIM    | NA          |                                                 |
|                         | ACC BETA                                        | 6.3E8           | 9.4E8 [R2]      | 1                  | 2,6 [R2]  | TEST-SIM    | YES         | NOTE 4                                          |
|                         | NEUTRON                                         | 4.4E12          |                 | 1                  | 2,4 [R2]  | AN + DATA   | NA          |                                                 |
| ACCURACY - -            | SPRAY                                           | YES             | YES [R2]        | 1                  | 7 [R2]    | TEST-SIM    | NA          |                                                 |
| SPEC: NA                | SUBMERGENCE                                     | NA              | NA              | NA                 | NA        | NA          | NA          |                                                 |
| DEMO: NA                |                                                 |                 |                 |                    |           |             |             |                                                 |
| ZONE NO.: PC240601      |                                                 |                 |                 |                    |           |             |             |                                                 |
| SUBMERGENCE: NA         | DOCUMENT REFERENCE:                             |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY: YES              | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                 |                 |                    |           |             |             | SEE THE DOCUMENT REFERENCED.                    |
|                         | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
|                         | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                 |                 |                    |           |             |             | DESIGN/AVERAGE.                                 |
|                         | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                 |                 |                    |           |             |             | 3.FOR OUTBOARD SIDE QUALIFICATION               |
|                         | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                 |                 |                    |           |             |             | SEE PAGE 2: SINCE IT EMPLOYS SAME               |
|                         | FILE NO. CES-2                                  |                 |                 |                    |           |             |             | MATERIALS (EXCEPT VITON) IT IS                  |
|                         | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2] |                 |                 |                    |           |             |             | QUALIFIED TO THE ENVIRONMENTAL                  |
|                         | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                 |                 |                    |           |             |             | CONDITIONS AT THE INBOARD SIDE;                 |
|                         | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                 |                 |                    |           |             |             | QUALIFIED PARAMETERS FOR VITON                  |
|                         | (CONAX IPS-1018) [R2]                           |                 |                 |                    |           |             |             | SEALINGS ENVELOPE SPECIFIED CON-                |
|                         | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                 |                 |                    |           |             |             | DITIONS - SEE CONAX REPORT                      |
|                         |                                                 |                 |                 |                    |           |             |             | IPS-325.                                        |
| MAINT/SURVEILL - - -    |                                                 |                 |                 |                    |           |             |             | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA           |
| REFERENCE: NA           |                                                 |                 |                 |                    |           |             |             | AND NEUTRON DOSES; QUALIFIED                    |
|                         |                                                 |                 |                 |                    |           |             |             | 9.4E8 RADS COVERS BETA DOSES.                   |
| QUALIFIED LIFE - - -    |                                                 |                 |                 |                    |           |             |             |                                                 |
| (YEARS): 40             |                                                 |                 |                 |                    |           |             |             |                                                 |
| REFERENCE: 2            |                                                 |                 |                 |                    |           |             |             |                                                 |
|                         | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                 |                 |                    |           |             |             |                                                 |



QUAL REF #\_E021PBW\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES*Z51E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 3.0E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.0E5              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC240136

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION          |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|--------------------------------|------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                |            | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                             |
|                                |            |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                     |
| EQUIP NO.:                     | 2CES*Z52E  |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| SPEC NO.:                      | E021P      | OP.TIME:                                                                                     | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                                                                                                                                                                                                     |
| SYSTEM:                        | CES-COMMON | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                              |
| ELECTRICAL SYSTEM              |            | NORMAL                                                                                       | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                              |
|                                |            | ABNORMAL                                                                                     | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| ITYPE: (DESCRIPTION)           |            | ACCIDENT                                                                                     | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                     |
| CONTROL ELECTRICAL             |            | PRESS (PSIG)                                                                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                              |
| PENETRATION 600 VOLTS          |            | NORMAL                                                                                       | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
|                                |            | ABNORMAL                                                                                     | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| MANUFACTURER: CONAX            |            | ACCIDENT                                                                                     | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                     |
|                                |            | RH (%):                                                                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                              |
| MODEL NO.:                     | 10006-03   | NORMAL                                                                                       | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
|                                |            | ABNORMAL                                                                                     | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| SAFETY FUNCTION: - - -         |            | ACCIDENT                                                                                     | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| PROVIDE CONTINUITY OF          |            | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                              |
| ELECTRICAL CIRCUITS AND        |            | NORM GAMMA                                                                                   | 3.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| CONTAINMENT INTEGRITY          |            | ACC GAMMA                                                                                    | 2.5E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                              |
| OP. CODE: A                    |            | NORM BETA                                                                                    | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
|                                |            | ACC BETA                                                                                     | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                              |
|                                |            | NEUTRON                                                                                      | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                                                                                                                                                                                                     |
|                                |            | SPRAY                                                                                        | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| ACCURACY - - -                 |            | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                     |
| SPEC: NA                       |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| DEMO: NA                       |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| ZONE NO.:                      | PC250623   |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| SUBMERGENCE:                   | NA         | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                        |
| SPRAY:                         | YES        | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                              |
|                                |            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325. |
| DOCUMENTATION ACCEPTABILITY:   |            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                    |                    |                    |           |                |                | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                    |
| ACCEPTABLE TO NUREG 0588,CAT I |            | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2]                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                |            | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                |            | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                |            | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| MAINT/SURVEILL - - -           |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| REFERENCE: NA                  |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| QUALIFIED LIFE - - -           |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| (YEARS): 40                    |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| REFERENCE: 2                   |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                |            | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |



| EQUIPMENT DESCRIPTION                            |                    | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------------------------|--------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                  |                    | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
| EQUIP NO.:                                       |                    |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| SPEC NO.:                                        | 2CES*Z52E<br>E021P |                                            |                    |                    |                    |           |                |                |         |
|                                                  |                    | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
|                                                  |                    | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |                    | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                                  |                    | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                  |                    | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |                    | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                  |                    | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |                    | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                                                  |                    | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |                    | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ACC GAMMA                                  | 5.3E7              | 1.10E8             | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                  |                    | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                                  |                    | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                  |                    | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                                  |                    | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                                                  |                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                                        |                    | SC240135                                   |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                     |                    |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                           |                    |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY |                    |                                            |                    |                    |                    |           |                |                |         |

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





[illegible]



| EQUIPMENT DESCRIPTION                               |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------------------------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                     |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                     |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                          | 2CES*Z53E |                                            |                    |                    |                    |           |                |                |         |
| SPEC NO.:                                           | E021P     |                                            |                    |                    |                    |           |                |                |         |
|                                                     |           | TOP.TIME:                                  | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
|                                                     |           | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                                                     |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                                     |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                     |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                     |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                                                     |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                     |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                     |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                     |           | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                                                     |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                     |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                     |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                                                     |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                     |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                     |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                     |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                                     |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                     |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
|                                                     |           | SPRAY                                      | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                                                     |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                                           | SC261145  |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                        |           |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                              |           |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO                            |           |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE OR SPRAY                                |           |                                            |                    |                    |                    |           |                |                |         |
| NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES AND NOTES. |           |                                            |                    |                    |                    |           |                |                |         |
| [R2] INDICATES CHANGES MADE IN THIS REVISION.       |           |                                            |                    |                    |                    |           |                |                |         |



18-Feb-86

QUAL REF # E021PBZ REV 2

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|---------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                             |
|                                 |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                     |
| EQUIP NO.: 2CES*Z54E            | OP.TIME:                                                                                     | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                                                                                                                                                                                                     |
| SPEC NO.: E021P                 | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                              |
| SYSTEM: CES-COMMON              | NORMAL                                                                                       | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                              |
| ELECTRICAL SYSTEM               | ABNORMAL                                                                                     | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| TYPE: (DESCRIPTION)             | ACCIDENT                                                                                     | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                     |
| CONTROL ELECTRICAL              | PRESS (PSIG)                                                                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                              |
| PENETRATION 600 VOLTS           | NORMAL                                                                                       | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| MANUFACTURER: CONAX             | ABNORMAL                                                                                     | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| MODEL NO.: 10006-05             | ACCIDENT                                                                                     | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                     |
| SAFETY FUNCTION: - - -          | RH (%):                                                                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                              |
| PROVIDE CONTINUITY OF           | NORMAL                                                                                       | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| ELECTRICAL CIRCUITS AND         | ABNORMAL                                                                                     | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| CONTAINMENT INTEGRITY           | ACCIDENT                                                                                     | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| OP. CODE: A                     | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                              |
|                                 | NORM GAMMA                                                                                   | 3.4E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
|                                 | ACC GAMMA                                                                                    | 2.5E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                              |
|                                 | NORM BETA                                                                                    | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
|                                 | ACC BETA                                                                                     | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                              |
|                                 | NEUTRON                                                                                      | 4.2E12             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                                                                                                                                                                                                     |
|                                 | SPRAY                                                                                        | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                     |
| ACCURACY - -                    | SUBMERGENCE                                                                                  | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                     |
| SPEC: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| DEMO: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| ZONE NO.: PC250630              |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| SUBMERGENCE: NA                 | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                        |
| SPRAY: YES                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                              |
|                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325. |
|                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                    |                    |                    |           |                |                | 4. QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                   |
| DOCUMENTATION ACCEPTABILITY:    | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2]                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| ACCEPTABLE TO NUREG 0588, CAT I | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                 | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                 | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| MAINT/SURVEILL - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| REFERENCE: NA                   |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| QUALIFIED LIFE - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| (YEARS): 40                     |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
| REFERENCE: 2                    |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                     |



18-Feb-86

QUAL REF # E021PBZ REV 2

| EQUIPMENT DESCRIPTION                         |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------------------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                               |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                               |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO. :                                   | 2CES*Z54E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO. :                                    | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                                               |           | NORMAL                                     | 104/88             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                               |           | ABNORMAL                                   | 94                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                               |           | ACCIDENT                                   | 175                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                               |           | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                               |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                                               |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                               |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                               |           | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                                               |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                               |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                                               |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                                               |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                               |           | NORM GAMMA                                 | 5.1E5              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                               |           | ACC GAMMA                                  | 5.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                               |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                               |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                                               |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                               |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                                               |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO. : SC240135                           |           |                                            |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                  |           |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                        |           |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY |           |                                            |                    |                    |                    |           |                |                |         |
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ZONE NO.: SC240135  
SUBMERGENCE:  
SPRAY:  
EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





18-Feb-86

QUAL REF #\_E021PCA\_ REV 2

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|---------------------------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                                                       |
|                                 |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                                               |
| EQUIP NO.: 2CES-Z55E            | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                                                                                                                                                                                                                               |
| SPEC NO.: E021P                 | TEMP (F):                                       |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                                                        |
| SYSTEM: CES-COMMON              | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                                                        |
| ELECTRICAL SYSTEM               | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| TYPE: (DESCRIPTION)             | ACCIDENT                                        | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                                               |
| LVP ELECTRICAL                  | PRESS(PSIG)                                     |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                                                        |
| PENETRATION 600 VOLTS           | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| MANUFACTURER: CONAX             | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| MODEL NO.: 10005-07             | ACCIDENT                                        | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                                               |
| SAFETY FUNCTION: - - -          | RH (%):                                         |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                                                        |
| PROVIDE CONTINUITY OF           | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| ELECTRICAL CIRCUITS AND         | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| CONTAINMENT INTEGRITY           | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| OP. CODE: A                     | RADIATION:                                      |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                                                        |
|                                 | NORM GAMMA                                      | 8.E06              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
|                                 | ACC GAMMA                                       | 3.3E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                                                        |
|                                 | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
|                                 | ACC BETA                                        | 6.3E8              | 19.4E8 [R2]        | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                                                        |
|                                 | NEUTRON                                         | 4.8E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                                                                                                                                                                                                                                                               |
|                                 | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                                               |
| ACCURACY - -                    | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                                                                                                                                                                                                                                                               |
| SPEC: NA                        |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| DEMO: NA                        |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| ZONE NO.: PC261641              |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| SUBMERGENCE: NA                 | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,<br>SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                                               |
| SPRAY: YES                      | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX<br>DESIGN/AVERAGE.                                                                                                                                                                                                                                     |
|                                 | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION<br>SEE PAGE 2: SINCE IT EMPLOYS SAME<br>MATERIALS (EXCEPT VITON) IT IS<br>QUALIFIED TO THE ENVIRONMENTAL<br>CONDITIONS AT THE INBOARD SIDE;<br>QUALIFIED PARAMETERS FOR VITON<br>SEALINGS ENVELOPE SPECIFIED CON-<br>DITIONS - SEE CONAX REPORT<br>IPS-325. |
|                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | 4. QUALIFIED 1.285E8 RADS COVERS GAMMA<br>AND NEUTRON DOSES; QUALIFIED<br>9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                                       |
|                                 | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                                 | FILE NO. CES-2                                  |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| DOCUMENTATION ACCEPTABILITY:    | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2] |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| ACCEPTABLE TO NUREG 0588, CAT I | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                                 | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                                 | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                                 | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| MAINT/SURVEILL - - -            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| REFERENCE: NA                   |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| QUALIFIED LIFE - - -            |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| (YEARS): 40                     |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
| REFERENCE: 2                    |                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                                               |



NINE MILE POINT - UNIT 2  
DOCKET NUMBER 50-410

SYSTEM COMPONENT EVALUATION WORK SHEET

PAGE 2  
OF 2

QUAL REF #\_E021PCA\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO. :           | 2CES-Z55E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO. :            | E021P     | TEMP (F):                                  | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      |         |
|                       |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS (PSIG)                               | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1  |
|                       |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



QUAL REF #\_E021PCB\_\_\_\_ REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
|---------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                            |
|                                 |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                    |
| EQUIP NO.: 2CES*Z57E            | OP.TIME:                                                                                     | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                                                                                                                                                                                                                                    |
| SPEC NO.: E021P                 | TEMP (F):                                                                                    |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                             |
| SYSTEM: CES-COMMON              | NORMAL                                                                                       | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                             |
| ELECTRICAL SYSTEM               | ABNORMAL                                                                                     | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                    |
| TYPE: (DESCRIPTION)             | ACCIDENT                                                                                     | 270                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                    |
| ILVP/CONTROL ELECTRICAL         | PRESS(PSIG)                                                                                  |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                             |
| PENETRATION 600V                | NORMAL                                                                                       | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                    |
| MANUFACTURER: CONAX             | ABNORMAL                                                                                     | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                    |
| MODEL NO.: 10005-09             | ACCIDENT                                                                                     | 40                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                    |
| SAFETY FUNCTION: - - -          | RH (%)                                                                                       |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                             |
| PROVIDE CONTINUITY OF           | NORMAL                                                                                       | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                    |
| ELECTRICAL CIRCUITS AND         | ABNORMAL                                                                                     | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                    |
| CONTAINMENT INTEGRITY           | ACCIDENT                                                                                     | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                    |
| OP. CODE: A                     | RADIATION:                                                                                   |                    |                    |                    |           |                |                | NOTE 1                                                                                                                                                                                                                                                             |
|                                 | NORM GAMMA                                                                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                    |
|                                 | ACC GAMMA                                                                                    | 3.6E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                             |
|                                 | NORM BETA                                                                                    | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                    |
|                                 | ACC BETA                                                                                     | 7.7E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                             |
|                                 | NEUTRON                                                                                      | 1.4E13             |                    | 1                  | 2,4 [R2]  | NA             | NA             |                                                                                                                                                                                                                                                                    |
|                                 | SPRAY                                                                                        | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                    |
| ACCURACY - -                    | SUBMERGENCE                                                                                  | >1SEC [R2]         | YES                | 8 [R2]             | 7 [R2]    | TEST-SIM       | NA             | NOTE 5                                                                                                                                                                                                                                                             |
| SPEC: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
| DEMO: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
| ZONE NO.: PC215121              |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
| SUBMERGENCE: YES                |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
| SPRAY: YES                      |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
|                                 | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                       |
|                                 | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                             |
|                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E(CONAX IPS-634)         |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325 |
|                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                    |                    |                    |           |                |                | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                   |
| DOCUMENTATION ACCEPTABILITY:    | 4. CALCULATION # 12177-EQS-19 (RADIATION)                                                    |                    |                    |                    |           |                |                | 5.THE CENTER LINE OF THIS PENETRA-TION IS LOCATED AT ELEVATION 220', OR 1 FT BELOW THE MAXIMUM WATER LEVEL DURING THE POOL SWELLING OF 221'. PENETRATION EXPOSURE TO POOL SWELLING LASTS LESS THAN 1 SEC - SEE REF. 8.                                             |
| ACCEPTABLE TO NUREG 0588, CAT I | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                    |                    |                    |           |                |                | THIS EVENT IS QUALIFIED BY REF. 8.                                                                                                                                                                                                                                 |
|                                 | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
|                                 | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
|                                 | 8. FSAR, APPENDIX 6A, TABLE 6A.4-3. [R2]                                                     |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
| MAINT/SURVEILL - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
| REFERENCE: NA                   |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
| QUALIFIED LIFE - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
| (YEARS): 40                     |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
| REFERENCE: 2                    |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                    |



18-Feb-86

QUAL REF #\_E021PCB\_ REV 2

| EQUIPMENT DESCRIPTION | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CES*Z57E  | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.: E021P       | TEMP (F):                                  |                    |                    |                    |           |                |                | NOTE 1  |
|                       | NORMAL                                     | 104/93             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       | ABNORMAL                                   | 106                | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                       | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ACCIDENT                                   | 2.8                | 72                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                       | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       | NORM GAMMA                                 | 2.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ACC GAMMA                                  | 5.8E7 [R2]         | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       | ACC BETA                                   | 6.1E6 [R2]         |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC215122  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





| EQUIPMENT DESCRIPTION          |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|--------------------------------|------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                |            | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                |            |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.:                     | 2CES*Z58E  | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                 |
| SPEC NO.:                      | E021P      | TEMP (F):                                       | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| SYSTEM:                        | CES-COMMON | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                          |
| ELECTRICAL SYSTEM              |            | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| TYPE: (DESCRIPTION)            |            | ACCIDENT                                        | 270                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| LVPC/CONTROL ELECTRICAL        |            | PRESS(PSIG)                                     | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| PENETRATION 600V               |            | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| MANUFACTURER: CONAX            |            | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |            | ACCIDENT                                        | 40                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| MODEL NO.:                     | 10005-10   | RH (%):                                         | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
|                                |            | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| SAFETY FUNCTION: - - -         |            | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| PROVIDE CONTINUITY OF          |            | ACCIDENT                                        | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| ELECTRICAL CIRCUITS AND        |            | RADIATION:                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                          |
| CONTAINMENT INTEGRITY          |            | NORM GAMMA                                      | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| OP. CODE: A                    |            | ACC GAMMA                                       | 3.6E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                          |
|                                |            | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |            | ACC BETA                                        | 7.7E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                          |
|                                |            | NEUTRON                                         | 1.4E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                 |
| ACCURACY - -                   |            | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                 |
| SPEC: NA                       |            | SUBMERGENCE                                     | 1SEC [R2]          | YES                | 8 [R2]             | 7 [R2]    | TEST-SIM       | NA             | NOTE 5                                          |
| DEMO: NA                       |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.:                      | PC215121   |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE:                   | YES        | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
| SPRAY:                         | YES        | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
|                                |            | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
|                                |            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | DESIGN/AVERAGE.                                 |
|                                |            | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION               |
|                                |            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                | SEE PAGE 2: SINCE IT EMPLOYS SAME               |
|                                |            | FILE NO. CES-2                                  |                    |                    |                    |           |                |                | MATERIALS (EXCEPT VITON) IT IS                  |
| DOCUMENTATION ACCEPTABILITY:   |            | 4. CALCULATION # 12177-EQS-19 (RADIATION) [R2]  |                    |                    |                    |           |                |                | QUALIFIED TO THE ENVIRONMENTAL                  |
| ACCEPTABLE TO NUREG 0588,CAT I |            | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                | CONDITIONS AT THE INBOARD SIDE;                 |
|                                |            | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                | QUALIFIED PARAMETERS FOR VITON                  |
|                                |            | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                | SEALINGS ENVELOPE SPECIFIED CON-                |
|                                |            | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                | DITIONS - SEE CONAX REPORT IPS-325.             |
|                                |            | 8. FSAR, APPENDIX 6A, TABLE 6A.4-3. [R2]        |                    |                    |                    |           |                |                | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA           |
| MAINT/SURVEILL - - -           |            |                                                 |                    |                    |                    |           |                |                | AND NEUTRON DOSES; QUALIFIED                    |
| REFERENCE: NA                  |            |                                                 |                    |                    |                    |           |                |                | 9.4E8 RADS COVERS BETA DOSES.                   |
| QUALIFIED LIFE - - -           |            |                                                 |                    |                    |                    |           |                |                | 5.THE CENTER LINE OF THIS PENETRA-              |
| (YEARS): 40                    |            |                                                 |                    |                    |                    |           |                |                | TION IS LOCATED AT ELEVATION 220',              |
| REFERENCE: 2                   |            |                                                 |                    |                    |                    |           |                |                | OR 1 FT BELOW THE MAXIMUM WATER LEVEL           |
|                                |            |                                                 |                    |                    |                    |           |                |                | DURING THE POOL SWELLING OF 221'.               |
|                                |            |                                                 |                    |                    |                    |           |                |                | PENETRATION EXPOSURE TO POOL SWELLING           |
|                                |            |                                                 |                    |                    |                    |           |                |                | LASTS LESS THAN 1 SEC - SEE REF. 8.             |
|                                |            | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    |           |                |                | THIS EVENT IS QUALIFIED BY REF. 7, 8 AND 9.     |



18-Feb-86

QUAL REF #\_E021PCC\_ REV 2

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES*Z58E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 104/93             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ABNORMAL                                   | 106                | 248                | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORM GAMMA                                 | 2.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.8E7 [R2]         | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6 [R2]         |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC215122  
SUBMERGENCE:  
SPRAY:  
EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



| EQUIPMENT DESCRIPTION           |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
|---------------------------------|------------|----------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |            | PARAMETER                                                                                    | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS                                                                                                                                                                                                                                                            |
|                                 |            |                                                                                              |                 |                 | SPECIFIED          | QUALIFIED |             |             |                                                                                                                                                                                                                                                                    |
| EQUIP NO.:                      | 2CES*Z59E  | OP.TIME:                                                                                     | 100 DAYS        | 100 DAYS        | 3                  | 2,5 [R2]  | AN + DATA   | YES         |                                                                                                                                                                                                                                                                    |
| SPEC NO.:                       | E021P      | TEMP (F):                                                                                    | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | - - - -                                                                                                                                                                                                                                                            |
| SYSTEM:                         | CES-COMMON | NORMAL                                                                                       | 150/135         | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 1                                                                                                                                                                                                                                                             |
| ELECTRICAL SYSTEM               |            | ABNORMAL                                                                                     | 190             | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2                                                                                                                                                                                                                                                             |
| TYPE: (DESCRIPTION)             |            | ACCIDENT                                                                                     | 270             | 370             | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                    |
| ILVP/CONTROL ELECTRICAL         |            | PRESS(PSIG)                                                                                  | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                                             |
| PENETRATION 600V                |            | NORMAL                                                                                       | 0.5 TO 1.0      | 1.0 [R2]        | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                    |
| MANUFACTURER: CONAX             |            | ABNORMAL                                                                                     | 1.95            | 62              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                    |
| MODEL NO.:                      | 10005-11   | ACCIDENT                                                                                     | 40              | 72 [R2]         | 1                  | 2         | TEST-SIM    | YES         |                                                                                                                                                                                                                                                                    |
| SAFETY FUNCTION: - - -          |            | IRH (%)                                                                                      | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                                             |
| PROVIDE CONTINUITY OF           |            | NORMAL                                                                                       | 90              | 95              | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                    |
| ELECTRICAL CIRCUITS AND         |            | ABNORMAL                                                                                     | 90              | 95 [R2]         | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                    |
| CONTAINMENT INTEGRITY           |            | ACCIDENT                                                                                     | 100             | STEAM           | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                    |
| OP. CODE: A                     |            | RADIATION:                                                                                   | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1                                                                                                                                                                                                                                                             |
|                                 |            | NORM GAMMA                                                                                   | 6.1E6           |                 | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                    |
|                                 |            | ACC GAMMA                                                                                    | 3.6E7           | 1.285E8         | 1                  | 2         | TEST-SIM    | YES         | NOTE 4                                                                                                                                                                                                                                                             |
|                                 |            | NORM BETA                                                                                    | 6.8E5           |                 | 1                  | 2         | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                    |
|                                 |            | ACC BETA                                                                                     | 7.7E8           | 9.4E8 [R2]      | 1                  | 2,6 [R2]  | TEST-SIM    | YES         | NOTE 4                                                                                                                                                                                                                                                             |
|                                 |            | NEUTRON                                                                                      | 1.4E13          |                 | 1                  | 2,4 [R2]  | AN + DATA   | NA          |                                                                                                                                                                                                                                                                    |
|                                 |            | SPRAY                                                                                        | YES             | YES [R2]        | 1                  | 7 [R2]    | TEST-SIM    | NA          |                                                                                                                                                                                                                                                                    |
| ACCURACY - -                    |            | SUBMERGENCE                                                                                  | 1 SEC [R2]      | YES             | 8 [R2]             | 7 [R2]    | TEST-SIM    | NA          | NOTE 5                                                                                                                                                                                                                                                             |
| SPEC: NA                        |            |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
| DEMO: NA                        |            |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
| ZONE NO.:                       | PC215121   |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
| SUBMERGENCE:                    | YES        |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
| SPRAY:                          | YES        |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
| DOCUMENTATION ACCEPTABILITY:    |            | DOCUMENT REFERENCE:                                                                          |                 |                 |                    |           |             |             | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                       |
| ACCEPTABLE TO NUREG 0588, CAT I |            | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                 |                 |                    |           |             |             | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                             |
|                                 |            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF #IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                 |                 |                    |           |             |             | 3.FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325 |
|                                 |            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                 |                 |                    |           |             |             | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                   |
|                                 |            | 4. CALCULATION # 12177-EQS-19 (RADIATION) [R2]                                               |                 |                 |                    |           |             |             | 5.THE CENTER LINE OF THIS PENETRATION IS LOCATED AT ELEVATION 220', OR 1 FT BELOW THE MAXIMUM WATER LEVEL DURING THE POOL SWELLING OF 221'. PENETRATION EXPOSURE TO POOL SWELLING LASTS LESS THAN 1 SEC - SEE REF. 8.                                              |
|                                 |            | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                 |                 |                    |           |             |             | THIS EVENT IS QUALIFIED BY REF.7.                                                                                                                                                                                                                                  |
|                                 |            | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
|                                 |            | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
|                                 |            | 8. FSAR, APPENDIX 6A, TABLE 6A.4-3. [R2]                                                     |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
| MAINT/SURVEILL - - -            |            |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
| REFERENCE: NA                   |            |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
| QUALIFIED LIFE - - -            |            |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
| (YEARS): 40                     |            |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
| REFERENCE: 2                    |            |                                                                                              |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |
|                                 |            | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                 |                 |                    |           |             |             |                                                                                                                                                                                                                                                                    |



NINE MILE POINT - UNIT 2  
DOCKET NUMBER 50-410

## SYSTEM COMPONENT EVALUATION WORK SHEET

PAGE 2  
OF 2

QUAL REF # E021PCD REV 2

18-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES*Z59E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        |         |
|                       |           | NORMAL                                     | 104/93             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 106                | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS (PSIG)                               | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%):                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1  |
|                       |           | NORM GAMMA                                 | 2.0E6              | .                  | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.8E7 [R2]         | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6 [R2]         |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

1 ZONE NO. : SC215122  
1 SUBMERGENCE:  
1 SPRAY:  
1  
1 EQUIPMENT NOT SUBJECT TO  
1 SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





QUAL REF #\_E021PCE\_ REV 2

19-Feb-86

| EQUIPMENT DESCRIPTION           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|---------------------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                              |
|                                 |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                      |
| EQUIP NO.: 2CES-260E            | OP.TIME:                                                                                     | 100 DAYS           | 100 DAYS           | 3                  | 2, 5 [R2] | AN + DATA      | YES            |                                                                                                                                                                                                                                                                      |
| SPEC NO.: E021P                 | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
| SYSTEM: CES-COMMON              | NORMAL                                                                                       | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                               |
| ELECTRICAL SYSTEM               | ABNORMAL                                                                                     | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| TYPE: (DESCRIPTION)             | ACCIDENT                                                                                     | 270                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                      |
| LVP/CONTROL ELECTRICAL          | PRESS (PSIG)                                                                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
| PENETRATION 600V                | NORMAL                                                                                       | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| MANUFACTURER: CONAX             | ABNORMAL                                                                                     | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| MODEL NO.: 10005-12             | ACCIDENT                                                                                     | 40                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                      |
| SAFETY FUNCTION: - - -          | RH (%):                                                                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
| PROVIDE CONTINUITY OF           | NORMAL                                                                                       | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| ELECTRICAL CIRCUITS AND         | ABNORMAL                                                                                     | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| CONTAINMENT INTEGRITY           | ACCIDENT                                                                                     | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| OP. CODE: A                     | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
|                                 | NORM GAMMA                                                                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 | ACC GAMMA                                                                                    | 3.6E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                               |
|                                 | NORM BETA                                                                                    | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 | ACC BETA                                                                                     | 7.7E8              | 9.4E8 [R2]         | 1                  | 2, 6 [R2] | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                               |
|                                 | NEUTRON                                                                                      | 1.4E13             |                    | 1                  | 2, 4 [R2] | AN + DATA      | NA             |                                                                                                                                                                                                                                                                      |
|                                 | SPRAY                                                                                        | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| ACCURACY - -                    | SUBMERGENCE                                                                                  | 1 SEC [R2]         | YES                | 8 [R2]             | 7 [R2]    | TEST-SIM       | NA             | NOTE 5                                                                                                                                                                                                                                                               |
| SPEC: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| DEMO: NA                        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| ZONE NO.: PC215121              |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| SUBMERGENCE: YES                |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| SPRAY: YES                      |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| DOCUMENTATION ACCEPTABILITY:    | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                        |
| ACCEPTABLE TO NUREG 0588, CAT I | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                              |
|                                 | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                    |                    |                    |           |                |                | 3. FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325. |
|                                 | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                    |                    |                    |           |                |                | 4. QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                    |
|                                 | 4. CALCULATION # 12177-EQS-19 (RADIATION) [R2]                                               |                    |                    |                    |           |                |                | 5. THE CENTER LINE OF THIS PENETRATION IS LOCATED AT ELEVATION 220', OR 1 FT BELOW THE MAXIMUM WATER LEVEL DURING THE POOL SWELLING OF 221'. PENETRATION EXPOSURE TO POOL SWELLING LASTS LESS THAN 1 SEC - SEE REF. 8.                                               |
|                                 | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                    |                    |                    |           |                |                | THIS EVENT IS QUALIFIED BY REF. 7.                                                                                                                                                                                                                                   |
|                                 | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | 8. FSAR, APPENDIX 6A, TABLE 6A.4-3. [R2]                                                     |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| MAINT/SURVEILL - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| REFERENCE: NA                   |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| QUALIFIED LIFE - - -            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| (YEARS): 40                     |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| REFERENCE: 2                    |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |



QUAL REF #\_E021PCE\_ REV 2

19-Feb-86

| EQUIPMENT DESCRIPTION |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:            | 2CES-Z60E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:             | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       |           | NORMAL                                     | 104/93             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       |           | ABNORMAL                                   | 106                | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 2.8                | 72                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | RH (%) :                                   |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       |           | NORM GAMMA                                 | 2.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       |           | ACC GAMMA                                  | 5.8E7 [R2]         | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | ACC BETA                                   | 6.1E6 [R2]         |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       |           | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC215122

SUBMERGENCE:

SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.



19-Feb-86

QUAL REF #\_E021PCF\_\_\_\_\_ REV 2

| EQUIPMENT DESCRIPTION           |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION                                                   |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|---------------------------------|------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |            | PARAMETER                                                                                    | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                                                                                                                                                                                                                                              |
|                                 |            |                                                                                              |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                                                                                                                                                                                                                                      |
| EQUIP NO.:                      | 2CES-Z56E  | OP.TIME:                                                                                     | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | IAN + DATA     | YES            |                                                                                                                                                                                                                                                                      |
| SPEC NO.:                       | E021P      | TEMP (F):                                                                                    | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
| SYSTEM:                         | CES-COMMON | NORMAL                                                                                       | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                                                                                                                                                                                                                                               |
|                                 |            | ABNORMAL                                                                                     | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| TYPE: (DESCRIPTION)             |            | ACCIDENT                                                                                     | 270                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                      |
| UNASSIGNED ELECTRICAL           |            | PRESS (PSIG)                                                                                 | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
| PENETRATION (BLANK)             |            | NORMAL                                                                                       | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 |            | ABNORMAL                                                                                     | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| MANUFACTURER: CONAX             |            | ACCIDENT                                                                                     | 40                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                                                                                                                                                                                                                                      |
|                                 |            | RH (%):                                                                                      | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
| MODEL NO.:                      | 10007-02   | NORMAL                                                                                       | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 |            | ABNORMAL                                                                                     | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| SAFETY FUNCTION: - - -          |            | ACCIDENT                                                                                     | 100                | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| PROVIDE CONTAINMENT INTEGRITY   |            | RADIATION:                                                                                   | - - - -            | - - - -            | - - - -            | - - - -   | - - - -        | - - - -        | NOTE 1                                                                                                                                                                                                                                                               |
|                                 |            | NORM GAMMA                                                                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 |            | ACC GAMMA                                                                                    | 3.6E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                               |
| OP. CODE: A                     |            | NORM BETA                                                                                    | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
|                                 |            | ACC BETA                                                                                     | 7.7E8              | 19.4E8 [R2]        | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                                                                                                                                                                                                                                               |
|                                 |            | NEUTRON                                                                                      | 1.4E13             |                    | 1                  | 2,4 [R2]  | IAN + DATA     | NA             |                                                                                                                                                                                                                                                                      |
|                                 |            | SPRAY                                                                                        | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                                                                                                                                                                                                                                      |
| ACCURACY - -                    |            | SUBMERGENCE                                                                                  | 1 SEC [R2]         | YES                | 8 [R2]             | 7 [R2]    | TEST-SIM       | NA             | NOTE 5                                                                                                                                                                                                                                                               |
| SPEC: NA                        |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| DEMO: NA                        |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| ZONE NO.:                       | PC215121   |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| SUBMERGENCE:                    | YES        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| SPRAY:                          | YES        |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 |            | DOCUMENT REFERENCE:                                                                          |                    |                    |                    |           |                |                | NOTES: 1. FOR COMPLETE ENVIRONMENTAL CONDITIONS, SEE THE DOCUMENT REFERENCED.                                                                                                                                                                                        |
|                                 |            | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2] |                    |                    |                    |           |                |                | 2. NORMAL TEMPERATURES ARE SHOWN AS MAX DESIGN/AVERAGE.                                                                                                                                                                                                              |
|                                 |            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT, SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]   |                    |                    |                    |           |                |                | 3. FOR OUTBOARD SIDE QUALIFICATION SEE PAGE 2: SINCE IT EMPLOYS SAME MATERIALS (EXCEPT VITON) IT IS QUALIFIED TO THE ENVIRONMENTAL CONDITIONS AT THE INBOARD SIDE; QUALIFIED PARAMETERS FOR VITON SEALINGS ENVELOPE SPECIFIED CONDITIONS - SEE CONAX REPORT IPS-325. |
| DOCUMENTATION ACCEPTABILITY:    |            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET: FILE NO. CES-2                                     |                    |                    |                    |           |                |                | 4. QUALIFIED 1.285E8 RADS COVERS GAMMA AND NEUTRON DOSES; QUALIFIED 9.4E8 RADS COVERS BETA DOSES.                                                                                                                                                                    |
| ACCEPTABLE TO NUREG 0588, CAT I |            | 4. CALCULATION # 12177-EQS-19 (RADIATION) [R2]                                               |                    |                    |                    |           |                |                | 5. THE CENTER LINE OF THIS PENETRATION IS LOCATED AT ELEVATION 220', OR 1 FT BELOW THE MAXIMUM WATER LEVEL DURING THE POOL SWELLING OF 221'. PENETRATION EXPOSURE TO POOL SWELLING LASTS LESS THAN 1 SEC - SEE REF. 8. THIS EVENT IS QUALIFIED BY REF. 7.            |
|                                 |            | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 |            | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A (CONAX IPS-1018) [R2]                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 |            | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]                                                 |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 |            | 8. FSAR, APPENDIX 6A, TABLE 6A.4-3. [R2]                                                     |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| MAINT/SURVEILL - - -            |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| REFERENCE: NA                   |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| QUALIFIED LIFE - - -            |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| (YEARS): 40                     |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
| REFERENCE: 2                    |            |                                                                                              |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |
|                                 |            | [R2] INDICATES CHANGES MADE IN THIS REVISION.                                                |                    |                    |                    |           |                |                |                                                                                                                                                                                                                                                                      |



| EQUIPMENT DESCRIPTION                            |                    | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|--------------------------------------------------|--------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                  |                    | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
| EQUIP NO.:                                       |                    |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| SPEC NO.:                                        | 2CES-Z56E<br>E021P |                                            |                    |                    |                    |           |                |                |         |
|                                                  |                    | OP. TIME:                                  | 100 DAYS           | 100 DAYS           | 3                  | 2, 5 [R2] | AN + DATA      | YES            |         |
|                                                  |                    | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                                                  |                    | NORMAL                                     | 104/93             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                  |                    | ABNORMAL                                   | 106                | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                                  |                    | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                  |                    | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |                    | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ACCIDENT                                   | 2.8                | 72                 | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                  |                    | RH (%)                                     |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |                    | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                                                  |                    | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                  |                    | NORM GAMMA                                 | 2.0E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                  |                    | ACC GAMMA                                  | 5.8E7 [R2]         | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                  |                    | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                                  |                    | ACC BETA                                   | 6.1E6 [R2]         |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                  |                    | NEUTRON                                    | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                                  |                    | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                                                  |                    | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| ZONE NO.:                                        |                    | SC215122                                   |                    |                    |                    |           |                |                |         |
| SUBMERGENCE:                                     |                    |                                            |                    |                    |                    |           |                |                |         |
| SPRAY:                                           |                    |                                            |                    |                    |                    |           |                |                |         |
| EQUIPMENT NOT SUBJECT TO<br>SUBMERGENCE OR SPRAY |                    |                                            |                    |                    |                    |           |                |                |         |

NOTE: SEE PAGE 1 FOR DOCUMENT REFERENCES AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.





| EQUIPMENT DESCRIPTION          |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION      |                    |                    |                    |           |                |                |                                                 |
|--------------------------------|------------|-------------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|-------------------------------------------------|
|                                |            | PARAMETER                                       | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS                                         |
|                                |            |                                                 |                    |                    | SPECIFIED          | QUALIFIED |                |                |                                                 |
| EQUIP NO.:                     | 2CES-Z50E  |                                                 |                    |                    |                    |           |                |                |                                                 |
| SPEC NO.:                      | E021P      |                                                 |                    |                    |                    |           |                |                |                                                 |
| SYSTEM:                        | CES-COMMON |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |            | OP.TIME:                                        | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |                                                 |
|                                |            | TEMP (F):                                       | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1                                          |
|                                |            | NORMAL                                          | 150/135            | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2                                          |
|                                |            | ABNORMAL                                        | 190                | 248                | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |            | ACCIDENT                                        | 340                | 370                | 1                  | 2         | TEST-SIM       | YES            |                                                 |
| TYPE: (DESCRIPTION)            |            | PRESS (PSIG)                                    | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1                                          |
| UNASSIGNED ELECTRICAL          |            | NORMAL                                          | 0.5 TO 1.0         | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| PENETRATION (BLANK)            |            | ABNORMAL                                        | 1.95               | 62                 | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| MANUFACTURER: CONAX            |            | ACCIDENT                                        | 45                 | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            |                                                 |
|                                |            | RH (%):                                         | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1                                          |
| MODEL NO.:                     | 10007-01   | NORMAL                                          | 90                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |            | ABNORMAL                                        | 90                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| SAFETY FUNCTION: - - -         |            | ACCIDENT                                        | STEAM              | STEAM              | 1                  | 2         | TEST-SIM       | NA             |                                                 |
| PROVIDE CONTAINMENT            |            | RADIATION:                                      | - - - - -          | - - - - -          | - - - - -          | - - - - - | - - - - -      | - - - - -      | NOTE 1                                          |
| INTEGRITY                      |            | NORM GAMMA                                      | 6.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |            | ACC GAMMA                                       | 2.6E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 4                                          |
| OP. CODE: A                    |            | NORM BETA                                       | 6.8E5              |                    | 1                  | 2         | TEST-SIM       | NA             |                                                 |
|                                |            | ACC BETA                                        | 6.3E8              | 9.4E8 [R2]         | 1                  | 2,6 [R2]  | TEST-SIM       | YES            | NOTE 4                                          |
|                                |            | NEUTRON                                         | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |                                                 |
|                                |            | SPRAY                                           | YES                | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |                                                 |
| ACCURACY - -                   |            | SUBMERGENCE                                     | NA                 | NA                 | NA                 | NA        | NA             | NA             |                                                 |
| SPEC: NA                       |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| DEMO: NA                       |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| ZONE NO.:                      | PC261649   |                                                 |                    |                    |                    |           |                |                |                                                 |
| SUBMERGENCE:                   | NA         |                                                 |                    |                    |                    |           |                |                |                                                 |
| SPRAY:                         | YES        |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |            | DOCUMENT REFERENCE:                             |                    |                    |                    |           |                |                | NOTES: 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS, |
|                                |            | 1. EQUIPMENT QUALIFICATION ENVIRONMENTAL DESIGN |                    |                    |                    |           |                |                | SEE THE DOCUMENT REFERENCED.                    |
|                                |            | CRITERIA, EQEDC-1, REV 3, DEC 20, 1985. [R2]    |                    |                    |                    |           |                |                | 2.NORMAL TEMPERATURES ARE SHOWN AS MAX          |
|                                |            | 2. VENDOR ENVIRONMENTAL QUALIFICATION REPORT,   |                    |                    |                    |           |                |                | DESIGN/AVERAGE.                                 |
|                                |            | SDDF # IEEE 1.290-5000E (CONAX IPS-634) [R2]    |                    |                    |                    |           |                |                | 3.FOR OUTBOARD SIDE QUALIFICATION               |
|                                |            | 3. EQUIPMENT OPERABILITY TIME DATA SHEET:       |                    |                    |                    |           |                |                | SEE PAGE 2: SINCE IT EMPLOYS SAME               |
|                                |            | FILE NO. CES-2                                  |                    |                    |                    |           |                |                | MATERIALS (EXCEPT VITON) IT IS                  |
| DOCUMENTATION ACCEPTABILITY:   |            | 4. CALCULATION # 12177-EQS-019 (RADIATION) [R2] |                    |                    |                    |           |                |                | QUALIFIED TO THE ENVIRONMENTAL                  |
| ACCEPTABLE TO NUREG 0588,CAT I |            | 5. CALCULATION # 12177-EQS-64 (OPER EXT) [R2]   |                    |                    |                    |           |                |                | CONDITIONS AT THE INBOARD SIDE;                 |
|                                |            | 6. VENDOR REPORT SDDF #IEEE 1.290-5017A         |                    |                    |                    |           |                |                | QUALIFIED PARAMETERS FOR VITON                  |
|                                |            | (CONAX IPS-1018) [R2]                           |                    |                    |                    |           |                |                | SEALINGS ENVELOPE SPECIFIED CON-                |
|                                |            | 7. VENDOR LETTER SDDF #IEEE 1.290-5027A [R2]    |                    |                    |                    |           |                |                | DITIONS - SEE CONAX REPORT                      |
|                                |            |                                                 |                    |                    |                    |           |                |                | IPS-325.                                        |
| MAINT/SURVEILL - - -           |            |                                                 |                    |                    |                    |           |                |                | 4.QUALIFIED 1.285E8 RADS COVERS GAMMA           |
| REFERENCE: NA                  |            |                                                 |                    |                    |                    |           |                |                | AND NEUTRON DOSES; QUALIFIED                    |
|                                |            |                                                 |                    |                    |                    |           |                |                | 9.4E8 RADS COVERS BETA DOSES.                   |
| QUALIFIED LIFE - - -           |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| (YEARS): 40                    |            |                                                 |                    |                    |                    |           |                |                |                                                 |
| REFERENCE: 2                   |            |                                                 |                    |                    |                    |           |                |                |                                                 |
|                                |            | [R2] INDICATES CHANGES MADE IN THIS REVISION.   |                    |                    |                    | </        |                |                |                                                 |



18-Feb-86

QUAL REF #\_E021PCH\_ REV 2

| EQUIPMENT DESCRIPTION                                                                                            |           | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                                                                                                                  |           | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                                                                                                                  |           |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.:                                                                                                       | 2CES-Z50E | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2,5 [R2]  | AN + DATA      | YES            |         |
| SPEC NO.:                                                                                                        | E021P     | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                                                                                                                  |           | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                                                                                                                  |           | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                                                                                                                  |           | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                                                                                  |           | PRESS(PSIG)                                |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                                                                  |           | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                                                  |           | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                                                  |           | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                                                                                  |           | IRH (%)                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                                                                  |           | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                                                  |           | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                                                  |           | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                                                                                                                  |           | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                                                                                                                  |           | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                                                                                                                  |           | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                                                                                                                  |           | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                                                                                                                  |           | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                                                                                                                  |           | NEUTRON                                    | 4.9E13             |                    | 1                  | 2,4 [R2]  | AN + DATA      | NA             |         |
|                                                                                                                  |           | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                                                                                                                  |           | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |
| <p>ZONE NO.: SC261145</p> <p>SUBMERGENCE:</p> <p>SPRAY:</p> <p>EQUIPMENT NOT SUBJECT TO SUBMERGENCE OR SPRAY</p> |           |                                            |                    |                    |                    |           |                |                |         |
| <p>NOTE: 1. SEE PAGE 1 FOR DOCUMENT REFERENCES AND NOTES.</p>                                                    |           |                                            |                    |                    |                    |           |                |                |         |
| <p>[R2] INDICATES CHANGES MADE IN THIS REVISION.</p>                                                             |           |                                            |                    |                    |                    |           |                |                |         |



| EQUIPMENT DESCRIPTION                     |            | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                 |                 |                    |           |             |             |         |
|-------------------------------------------|------------|--------------------------------------------|-----------------|-----------------|--------------------|-----------|-------------|-------------|---------|
|                                           |            | PARAMETER                                  | SPECIFIED VALUE | QUALIFIED VALUE | DOCUMENT REFERENCE |           | QUAL METHOD | MARGIN DEMO | REMARKS |
|                                           |            |                                            |                 |                 | SPECIFIED          | QUALIFIED |             |             |         |
| EQUIP NO.:                                | 2CES-Z48E  |                                            |                 |                 |                    |           |             |             |         |
| SPEC NO.:                                 | E021P      | OP.TIME:                                   | 100 DAYS        | 100 DAYS        | 3                  | 2,5 [R2]  | AN + DATA   | YES         |         |
| SYSTEM:                                   | CES-COMMON | TEMP (F):                                  | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                           |            | NORMAL                                     | 150/135         | 248             | 1                  | 2         | TEST-SIM    | NA          | NOTE 2  |
|                                           |            | ABNORMAL                                   | 190             | 248             | 1                  | 2         | TEST-SIM    | NA          |         |
|                                           |            | ACCIDENT                                   | 340             | 370             | 1                  | 2         | TEST-SIM    | YES         |         |
| TYPE: (DESCRIPTION)                       |            | PRESS(PSIG)                                | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| UNASSIGNED ELECTRICAL PENETRATION (BLANK) |            | NORMAL                                     | 0.5 TO 1.0      | 1.0 [R2]        | 1                  | 2         | TEST-SIM    | NA          |         |
|                                           |            | ABNORMAL                                   | 1.95            | 62              | 1                  | 2         | TEST-SIM    | NA          |         |
| MANUFACTURER: CONAX                       |            | ACCIDENT                                   | 45              | 72 [R2]         | 1                  | 2         | TEST-SIM    | YES         |         |
|                                           |            | RH (%):                                    | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
| MODEL NO.: 10007-01                       |            | NORMAL                                     | 90              | 95              | 1                  | 2         | TEST-SIM    | NA          |         |
|                                           |            | ABNORMAL                                   | 90              | 95 [R2]         | 1                  | 2         | TEST-SIM    | NA          |         |
| SAFETY FUNCTION: - - -                    |            | ACCIDENT                                   | STEAM           | STEAM           | 1                  | 2         | TEST-SIM    | NA          |         |
| PROVIDE CONTAINMENT INTEGRITY             |            | RADIATION:                                 | - - - -         | - - - -         | - - - -            | - - - -   | - - - -     | - - - -     | NOTE 1  |
|                                           |            | NORM GAMMA                                 | 6.9E6           |                 | 1                  | 2         | TEST-SIM    | NA          |         |
|                                           |            | ACC GAMMA                                  | 3.0E7 [R1]      | 1.285E8         | 1                  | 2         | TEST-SIM    | YES         | NOTE 4  |
| OP. CODE: A                               |            | NORM BETA                                  | 6.8E5           |                 | 1                  | 2         | TEST-SIM    | NA          |         |
|                                           |            | ACC BETA                                   | 6.3E8           | 9.4E8 [R2]      | 1                  | 2,6 [R2]  | TEST-SIM    | YES         | NOTE 4  |
|                                           |            | NEUTRON                                    | 4.9E13          |                 | 1                  | 2,4 [R2]  | AN + DATA   | NA          |         |
|                                           |            | SPRAY                                      | YES             | YES [R2]        | 1                  | 7 [R2]    | TEST-SIM    | NA          |         |
| ACCURACY - -                              |            | SUBMERGENCE                                | NA              | NA              | NA                 | NA        | NA          | NA          |         |
| SPEC: NA                                  |            |                                            |                 |                 |                    |           |             |             |         |
| DEMO: NA                                  |            |                                            |                 |                 |                    |           |             |             |         |
| ZONE NO.: PC261644                        |            |                                            |                 |                 |                    |           |             |             |         |
| SUBMERGENCE: NA                           |            |                                            |                 |                 |                    |           |             |             |         |
| SPRAY: YES                                |            |                                            |                 |                 |                    |           |             |             |         |
|                                           |            |                                            |                 |                 |                    |           |             |             |         |
| DOCUMENTATION ACCEPTABILITY:              |            |                                            |                 |                 |                    |           |             |             |         |
| ACCEPTABLE TO NUREG 0588,CAT I            |            |                                            |                 |                 |                    |           |             |             |         |
|                                           |            |                                            |                 |                 |                    |           |             |             |         |
|                                           |            |                                            |                 |                 |                    |           |             |             |         |
| MAINT/SURVEILL - - -                      |            |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: NA                             |            |                                            |                 |                 |                    |           |             |             |         |
|                                           |            |                                            |                 |                 |                    |           |             |             |         |
| QUALIFIED LIFE - - -                      |            |                                            |                 |                 |                    |           |             |             |         |
| (YEARS): 40                               |            |                                            |                 |                 |                    |           |             |             |         |
| REFERENCE: 2                              |            |                                            |                 |                 |                    |           |             |             |         |
|                                           |            |                                            |                 |                 |                    |           |             |             |         |
|                                           |            |                                            |                 |                 |                    |           |             |             |         |
|                                           |            |                                            |                 |                 |                    |           |             |             |         |

[R2] INDICATES CHANGES MADE IN THIS REVISION.

NOTES:  
 1.FOR COMPLETE ENVIRONMENTAL CONDITIONS,  
SEE THE DOCUMENT REFERENCED.  
 2.NORMAL TEMPERATURES ARE SHOWN AS MAX  
DESIGN/AVERAGE.  
 3.FOR OUTBOARD SIDE QUALIFICATION  
SEE PAGE 2: SINCE IT EMPLOYS SAME  
MATERIALS (EXCEPT VITON) IT IS  
QUALIFIED TO THE ENVIRONMENTAL  
CONDITIONS AT THE INBOARD SIDE;  
QUALIFIED PARAMETERS FOR VITON  
SEALINGS ENVELOPE SPECIFIED CON-  
DITIONS - SEE CONAX REPORT  
IPS-325.  
 4.QUALIFIED 1.285E8 RADS COVERS GAMMA  
AND NEUTRON DOSES; QUALIFIED  
9.4E8 RADS COVERS BETA DOSES.



NINE MILE POINT - UNIT 2  
DOCKET NUMBER 50-410

SYSTEM COMPONENT EVALUATION WORK SHEET

PAGE 2  
OF 2

QUAL REF #\_E021PCG\_ REV 2

19-Feb-86

| EQUIPMENT DESCRIPTION | ENVIRONMENTAL CONDITIONS AND QUALIFICATION |                    |                    |                    |           |                |                |         |
|-----------------------|--------------------------------------------|--------------------|--------------------|--------------------|-----------|----------------|----------------|---------|
|                       | PARAMETER                                  | SPECIFIED<br>VALUE | QUALIFIED<br>VALUE | DOCUMENT REFERENCE |           | QUAL<br>METHOD | MARGIN<br>DEMO | REMARKS |
|                       |                                            |                    |                    | SPECIFIED          | QUALIFIED |                |                |         |
| EQUIP NO.: 2CES-Z48E  | OP.TIME:                                   | 100 DAYS           | 100 DAYS           | 3                  | 2, 5 [R2] | AN + DATA      | YES            |         |
| SPEC NO.: E021P       | TEMP (F):                                  |                    |                    |                    |           |                |                |         |
|                       | NORMAL                                     | 104/85             | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 1  |
|                       | ABNORMAL                                   | 87                 | 248                | 1                  | 2         | TEST-SIM       | NA             | NOTE 2  |
|                       | ACCIDENT                                   | 200                | 370                | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       | PRESS (PSIG)                               |                    |                    |                    |           |                |                | NOTE 1  |
|                       | NORMAL                                     | -0.25 IN WG        | 1.0 [R2]           | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ABNORMAL                                   | -0.25 IN WG        | 62                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ACCIDENT                                   | 2.8                | 72 [R2]            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       | RH (%):                                    |                    |                    |                    |           |                |                | NOTE 1  |
|                       | NORMAL                                     | 50                 | 95                 | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ABNORMAL                                   | 50                 | 95 [R2]            | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ACCIDENT                                   | 100                | 100                | 1                  | 2         | TEST-SIM       | NA             | NOTE 3  |
|                       | RADIATION:                                 |                    |                    |                    |           |                |                | NOTE 1  |
|                       | NORM GAMMA                                 | 7.9E6              |                    | 1                  | 2         | TEST-SIM       | NA             |         |
|                       | ACC GAMMA                                  | 5.9E7              | 1.285E8            | 1                  | 2         | TEST-SIM       | YES            | NOTE 3  |
|                       | NORM BETA                                  | NA                 |                    | 1                  | NA        | NA             | NA             |         |
|                       | ACC BETA                                   | 6.1E6              |                    | 1                  | 2         | TEST-SIM       | YES            |         |
|                       | NEUTRON                                    | 4.9E13             |                    | 1                  | 2, 4 [R2] | AN + DATA      | NA             |         |
|                       | SPRAY                                      | NA                 | YES [R2]           | 1                  | 7 [R2]    | TEST-SIM       | NA             |         |
|                       | SUBMERGENCE                                | NA                 | NA                 | NA                 | NA        | NA             | NA             |         |

ZONE NO.: SC261145  
SUBMERGENCE:  
SPRAY:

EQUIPMENT NOT SUBJECT TO  
SUBMERGENCE OR SPRAY

NOTE: 1. SEE PAGE 1 FOR DOCUMENT REFERENCES  
AND NOTES.

[R2] INDICATES CHANGES MADE IN THIS REVISION.

