THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

P.O. BOX 5000 - CLEVELAND, OHIO 44101 - TELEPHONE (216) 622-9800 - ILLUMINATING BLDG. — 55 PUBLIC SQUARE

Serving The Best Location in the Nation

MURRAY R. EDELMAN
VICE PRESIDENT
NUCLEAR

April 5, 1984
PY-CEI/NRR-0101 L

Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Perry Nuclear Power Plant
Docket Nos. 50-440; 50-441
Additional Information in Response to
Environmental Qualification Audit

Dear Mr. Youngblood:

This letter and its attachments are being submitted as further follow-up to our letter dated March 7, 1984, (PY-CEI/NRR-0093 L) regarding the NRC Staff Report of the Perry Nuclear Power Plant Environmental Qualification Audit conducted January 16 thru January 20, 1984. (Reference NRC letter from B. J. Youngblood to Murray Edelman dated February 14, 1984.)

The enclosed revised System Component Evaluation Worksheets (SCEW's) address the Items Nos. 1, 2, & 6, in our March 7, 1984 letter. CEI is still in the process of closing out Item No. 4 and the new submittal date for this item will be April 23, 1984.

If you have any questions please feel free to call.

Very truly yours,

A. Kaplan for M. Edelman

Murray R. Edelman
Vice President
Nuclear Group

MRE:kay

cc: Jay Silberg, Esq.
John Stefano
Max Gildner
Q. Decker, EG&G Idaho

A048
1/1 Limited Dist

CLEVELAND ELECTRIC ILLUMINATING CO.
PERRY NUCLEAR POWER PLANT
ENVIRONMENTAL QUALIFICATION OF CLASS IE EQUIPMENT
IN A HARSH ENVIRONMENT SCEW STATUS & SCHEDULE
(NSSS SP-301 SCOPE EQUIPMENT

SPEC NUMBER OR SUMMARY	EQUIPMENT DESCRIPTION	EQRL STATUS
SP-301-S01-00	GE Motors (HPCS, LPCS, RHR)	A
SP-301-S02-00	Dikkers SRV's	C
SP-301-S05(A)-00	Sheffer Actuntor - MSIV's	C
SP-301-S05(B)-00	NAMCO Limit Switch - MSIV's	C
SP-301-S06-00	GE (LOMPAC) Heater - MSIV LCS Heater	B
SP-301-S07-00	Siemens Motor - MSIV LCS Blower	C
SP-301-S08/S09-00	RCIC Steam Turbine Assembly	B
SP-301-S11-00	Conax Squibb Valve - SLC	A
SP-301-S12-00	GE CRD Hydraulic Control Units	A
SP-301-C01-00	Rosemount 1152/1152 TO280 Pressure Transmitter	C
SP-301-C03-00	PYCO Temperature Elements	C
SP-301-C07-00	S&K Flow Meter	C
SP-301-C08-00	S&K Flow Transmitter	C
SP-301-C23-00	PRM Connector	A
SP-301-A01-00	Rosemount 1153 Pressure Transmitter	C
SP-301-A02-00	Pressure Control Inc. Pressure Switch	B
SP-301-A03-00	Valcor Solenoid Valve	C
SP-301-A06-00	Magnetrol Level Switch	B
SP-301-A07-00	Gould Level Transmitter	B

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-S01-00
MANUFACTURER'S QUALIFICATION REPORT NO. NEDC-30197 REV. 0 (July, 1983)
QUALIFICATION METHOD Combination - Testing Extended by Analysis
EQUIPMENT DESCRIPTION ECCS Pump Motors - RHR (E12C002)/LPCS (E21C001)/HPCS (E22C001)
MANUFACTURER/MODEL NO. General Electric/5K6338XC105A/5K6347XC100A/5K6357XC18A
TESTED DEVICE MODEL NO. 5K6339XC166A + Formette Testing

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON. ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-4	113°F	8,372 Hours
AVERAGE	AB-4	101°F	336,992 Hours
MINIMUM	AB-2	81°F	2,056 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-2	154/106°F	49 Hours
Normal Shutdown (Motor Running)	AB-2	140/106°F	25,974 Hours
Continuation of Shutdown (Motor Running)	AB-2	140/106°F	28,800 Hours
RADIATION DOSE (RADS, TID)	AB-4 (5)	3×10^5 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 200°C Winding Temp/1350 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL LPCS/HPCS: 40 Years/10 Years, RHR: 17.5 Years/10Years
LIFE-LIMITING COMPONENT None - Wear Inspection at 42,000 Operating Hours or 10 Years
TEST RADIATION DOSE (TID) 5.5×10^6 Rads (6)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	The test motor was aged and operated at full load during accident simulation.
FUNCTION TIME (FT)	I (100 Days)	216 Hours at 195°C winding temperature or 170 days at 140°F ambient.
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON. ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-4	140°F (160°F Peak)	212°F (2 x 6 hr. peak) 216hr @ 195°C (LongTerm)	52°F (Peak)
PRESSURE (PSIG)	AB-4	0.6 PSIG	ATMOS (7)	(7)
R.H. (%)	AB-4	100%	100%	N/A
SPRAY	AB-2/4	N/A	N/A	N/A
SUBMERGENCE	AB-2/4	N/A	N/A	N/A
RADIATION (RADS)	AB-4 (1)	4.1×10^7 Rads	4.57×10^7 Rads (6)	4.7×10^6 Rads

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV. NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise /
CHECKED BY Eddie B. Thomas Jr. 12-21-84
APPROVED BY [illegible] 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-S01-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Maximum radiation dose is based on a total of normal + accident.

6. Radiation qualification was extended to 4.6×10^7 rads (motor leads) and 2×10^8 rads (for other radiation sensitive components) by analysis.

7. The 0.6 psig pressure transient occurs during the first hour of HELB in zone AB-4. It is not significant with respect to cables and motor windings. The motor enclosure is open drip-proof thus differential pressure across the housing has no structural or leakage effects.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S01-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S01-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1E12 C 0002A	RESIDUAL HEAT REMOVAL SYSTEM	GE	AB-4	A	A1	I	YES	N/A		YES	C	17Y	SP301-S01-00
	RHR PUMP	5K6338XC105A	HARSH					N/A				10Y	
	301 21A3504AK MOTOR		AXB/07-568										
1E12 C 0002B	RESIDUAL HEAT REMOVAL SYSTEM	GE	AB-4	A	A1	I	YES	N/A		YES	C	17Y	SP301-S01-00
	RHR PUMP	5K6338XC105A	HARSH					N/A				10Y	
	301 21A3504AK MOTOR		AXB/04-568										
1E12 C 0002C	RESIDUAL HEAT REMOVAL SYSTEM	GE	AB-4	A	A1	I	YES	N/A		YES	C	17Y	SP301-S01-00
	RHR PUMP	5K6338XC105A	HARSH					N/A				10Y	
	301 21A3504AK MOTOR		AXB/05-568										
1E21 C 0001	LOW PRESSURE CORE SPRAY SYSTEM	GE	AB-2	A	A1	I	YES	N/A		YES	C	40Y	SP301-S01-00
	LPCS PUMP	5K6347XC100A	HARSH					N/A				10Y	
	301 21A3504BC MOTOR		AXB/08-568										
1 1E22 C 0001	HPCS POWER SUPPLY SYSTEM	GE	AB-2	A	A1	I	YES	N/A		YES	C	40Y	SP301-S01-00
	HPCS PUMP	5K6357XC18A	HARSH					N/A				10Y	
	301 21A3504AR MOTOR		AXB/03-568										

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-S02-00
MANUFACTURER'S QUALIFICATION REPORT NO. (6) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Dual Function Safety/Relief Valve (SRV)
MANUFACTURER/MODEL NO. Dikkers/G471-6/125.04
TESTED DEVICE MODEL NO. (Same as above)

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	DW-2	135°F	8,401 Hours
AVERAGE	DW-2	134°F	338,149 Hours
MINIMUM	DW-2	122°F	3,501 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-2	141/135°F	600 @ 30 Min.
Loss of HVAC (Non-Safety)	DW-2	136/135°F	49 Hours
RADIATION DOSE (RADS, TID)	DW-2	4.5×10^7 (5)(2)	40 Years

ACCELERATED AGING TEMP./TIMES 300°F/23 Days (6)
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/5 Years (6)
LIFE-LIMITING COMPONENT EPDM Sealing Materials (6)
TEST RADIATION DOSE (TID) Under Review (6) (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED (6)
EQUIPMENT CATEGORY (EC)	A1	Operability will be demonstrated throughout test.
FUNCTION TIME (FT)	I (100 Days)	2 Days open/close, 100 Days fail as is
ACCURACY (ACC) (4)	± 15 psi	to be demonstrated during DBE testing
RESPONSE TIME (RT)	0.25 Seconds	To be demonstrated during DBE testing

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED (6)	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-2	330°F	355°F	25
PRESSURE (PSIG)	DW-2	22.1	60	37.9
R.H. (%)	DW-2	100% (Steam)	100% (Steam)	N/A
SPRAY	DW-2	N/A	N/A	N/A
SUBMERGENCE	DW-2	N/A	N/A	N/A
RADIATION (RADS)	DW-2	2.7×10^7 (7)	Under Review (2)	> 10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise / 2/2/84
CHECKED BY Eddie B. Thomas Jr. 12-21-84
APPROVED BY M. A. Mathews 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-S02-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   Per General Electric, Functional Performance Requirements.

5. Neutron fluence is: 1.8×10^{15} Ntn/CM^2 (40-year TID).

6. Demonstrated values are based on those specified in the GE Pre-Test Evaluation (PTE), Product Analysis Report (PAR) and Product Performance Qualification Specification (PPQS) all done in accordance with GE Licensing Topical Report NEDE-24326-1-P dated January, 1983. Testing is scheduled for completion September 28, 1984.

7. A specific analysis of the accident radiation applicable to operation of the SRV's indicates that during a small break LOCA (less than 0.5 sq. ft.) when the SRV must actuate there is no fuel damage and, therefore, no accident radiation.

   The limiting event for SRV actuation is then the ATWS event where a conservative 10% of LOCA radiation is used.

   Beta radiation is not significant since all parts susceptible to radiation are shielded by metal enclosures.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S02-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S02-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	MANUFACTURER / MODEL / EQUIP. DESCRIPTION	ZONE / LOCATION	QUALD / CAT	EC / ELEV	F / SEAL	OPER / DEMO	ACC RES / H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI	SUMMARY
1B21 F 0041A	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I		N/A		T	SP301-S02-00
	ADS VALVE	G471-6/125.04	HARSH					N/A			
	301 768E584P10 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/02-630					H2			
1B21 F 0041B	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I		N/A		T	SP301-S02-00
	ADS VALVE	G471-6/125.04	HARSH					N/A			
	301 768E584P10 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/14-630					H2			
1B21 F 0041C	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I		N/A		T	SP301-S02-00
	SAFETY RELIEF VALVE	G471-6/125.04	HARSH					N/A			
	301 768E584P10 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/04-630					H2			
1B21 F 0041D	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I		N/A		T	SP301-S02-00
	SAFETY RELIEF VALVE	G471-6/125.04	HARSH					N/A			
	301 768E584P10 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/16-630					H2			
1B21 F 0041E	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I		N/A		T	SP301-S02-00
	ADS VALVE	G471-6/125.04	HARSH					N/A			
	301 768E584P10 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/01-630					H2			
1B21 F 0041F	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I		N/A		T	SP301-S02-00
	ADS VALVE	G471-6/125.04	HARSH					N/A			
	301 768E584P10 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/15-630					H2			
1B21 F 0041G	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I		N/A		T	SP301-S02-00
	SAFETY RELIEF VALVE	G471-6/125.04	HARSH					N/A			
	301 768E584P10 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/03-630					H2			
1B21 F 0041K	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I		N/A		T	SP301-S02-00
	SAFETY RELIEF VALVE	G471-6/125.04	HARSH					N/A			
	301 768E584P10 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/16-630					H2			
1B21 F 0047B	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I		N/A		T	SP301-S02-00
	SAFETY RELIEF VALVE	G471-6/125.04	HARSH					N/A			
	301 768E584P14 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/14-630					H2			
1B21 F 0047C	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I		N/A		T	SP301-S02-00
	SAFETY RELIEF VALVE	G471-6/125.04	HARSH					N/A			
	301 768E584P14 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/03-630					H2			
1B21 F 0047D	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I		N/A		T	SP301-S02-00
	ADS VALVE	G471-6/125.04	HARSH					N/A			
	301 768E584P14 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/16-630					H2			

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-SO2-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-SO2-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO DEMO	QUALIFICATION M LF/MI	SUMMARY
1B21 F 0047F	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I	N/A		T	SP301-SO2-00
	SAFETY RELIEF VALVE	G471-6/125.04	HARSH				N/A			
	301 768E584P14 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/16-630				H2			
1B21 F 0047G	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I	N/A		T	SP301-SO2-00
	SAFETY RELIEF VALVE	G471-6/125.04	HARSH				N/A			
	301 768E584P14 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/02-630				H2			
1B21 F 0047H	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I	N/A		T	SP301-SO2-00
	ADS VALVE	G471-6/125.04	HARSH				N/A			
	301 768E584P14 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/17-630				H2			
1B21 F 0051A	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I	N/A		T	SP301-SO2-00
	SAFETY RELIEF VALVE	G471-6/125.04	HARSH				N/A			
	301 768E584P15 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/01-630				H2			
1B21 F 0051B	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I	N/A		T	SP301-SO2-00
	SAFETY RELIEF VALVE	G471-6/125.04	HARSH				N/A			
	301 768E584P15 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/15-630				H2			
1B21 F 0051C	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I	N/A		T	SP301-SO2-00
	ADS VALVE	G471-6/125.04	HARSH				N/A			
	301 768E584P15 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/04-630				H2			
1B21 F 0051D	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I	N/A		T	SP301-SO2-00
	SAFETY RELIEF VALVE	G471-6/125.04	HARSH				N/A			
	301 768E584P15 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/17-630				H2			
1B21 F 0051G	AUTOMATIC DEPRESSURIZATION SYSTEM	DIKKERS	DW-2	C	A1	I	N/A		T	SP301-SO2-00
	ADS VALVE	G471-6/125.04	HARSH				N/A			
	301 768E584P15 DUAL FUNCTION SAFETY/RELIEF VALVE		C I/03-630				H2			
1B21 F 0410A	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I	N/A		T	SP301-SO2-00
	ADS VALVE	6A33	HARSH				N/A			
	301 768E584P10 SOLENOID		C I/02-630				H2			
1B21 F 0410B	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I	N/A		T	SP301-SO2-00
	ADS VALVE	6A33	HARSH				N/A			
	301 768E584P10 SOLENOID		C I/02-630				H2			
1B21 F 0411A	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I	N/A		T	SP301-SO2-00
	ADS VALVE	6A33	HARSH				N/A			
	301 768E584P10 SOLENOID		C I/14-630				H2			

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S02-00 AS OF 00636 03/22/84
SELECT :
SORT : G1
TITLE : EQRL SP301-S02-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT SEAL	OPER DEMO	ACC RES H2/H2	ACC/RT TME DEMO DEMO	QUALIFICATION M LF/MI	SUMMARY
1B21 F 0411B	AUTOMATIC DEPRESSURIZATION SYSTEM ADS VALVE 301 768E584P10 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/14-630	C	A1	I		N/A H2	N/A	T	SP301-S02-00
1B21 F 0412A	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P10 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/04-630	C	A1	I		N/A H2	N/A	T	SP301-S02-00
1B21 F 0412B	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P10 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/04-630	C	A1	I		N/A H2	N/A	T	SP301-S02-00
1B21 F 0413A	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P10 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/16-630	C	A1	I		N/A H2	N/A	T	SP301-S02-00
1B21 F 0413B	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P10 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/16-630	C	A1	I		N/A H2	N/A	T	SP301-S02-00
1B21 F 0414A	AUTOMATIC DEPRESSURIZATION SYSTEM ADS VALVE 301 768E584P10 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/01-630	C	A1	I		N/A H2	N/A	T	SP301-S02-00
1B21 F 0414B	AUTOMATIC DEPRESSURIZATION SYSTEM ADS VALVE 301 768E584P10 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/01-630	C	A1	I		N/A H2	N/A	T	SP301-S02-00
1B21 F 0415A	AUTOMATIC DEPRESSURIZATION SYSTEM ADS VALVE 301 768E584P10 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/15-630	C	A1	I		N/A H2	N/A	T	SP301-S02-00
1B21 F 0415B	AUTOMATIC DEPRESSURIZATION SYSTEM ADS VALVE 301 768E584P10 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/15-630	C	A1	I		N/A H2	N/A	T	SP301-S02-00
1B21 F 0416A	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P10 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/03-630	C	A1	I		N/A H2	N/A	T	SP301-S02-00
1B21 F 0416B	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P10 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/03-630	C	A1	I		N/A H2	N/A	T	SP301-S02-00

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-SO2-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-SO2-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT SEAL	OPER DEMO	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	LF/MI	QUALIFICATION SUMMARY
1B21 F 0417A	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I		N/A			T		SP301-SO2-00
	SAFETY RELIEF VALVE	6A33	HARSH						N/A				
	301 768E584P10 SOLENOID		C I/16-630					H2					
1B21 F 0417B	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I		N/A			T		SP301-SO2-00
	SAFETY RELIEF VALVE	6A33	HARSH						N/A				
	301 768E584P10 SOLENOID		C I/16-630					H2					
1B21 F 0420A	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I		N/A			T		SP301-SO2-00
	SAFETY RELIEF VALVE	6A33	HARSH						N/A				
	301 768E584P14 SOLENOID		C I/14-630					H2					
1B21 F 0420B	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I		N/A			T		SP301-SO2-00
	SAFETY RELIEF VALVE	6A33	HARSH						N/A				
	301 768E584P14 SOLENOID		C I/14-630					H2					
1B21 F 0421A	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I		N/A			T		SP301-SO2-00
	SAFETY RELIEF VALVE	6A33	HARSH						N/A				
	301 768E584P14 SOLENOID		C I/03-630					H2					
1B21 F 0421B	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I		N/A			T		SP301-SO2-00
	SAFETY RELIEF VALVE	6A33	HARSH						N/A				
	301 768E584P14 SOLENOID		C I/03-630					H2					
1B21 F 0422A	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I		N/A			T		SP301-SO2-00
	ADS VALVE	6A33	HARSH						N/A				
	301 768E584P14 SOLENOID		C I/16-630					H2					
1B21 F 0422B	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I		N/A			T		SP301-SO2-00
	ADS VALVE	6A33	HARSH						N/A				
	301 768E584P14 SOLENOID		C I/16-630					H2					
1B21 F 0423A	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I		N/A			T		SP301-SO2-00
	SAFETY RELIEF VALVE	6A33	HARSH						N/A				
	301 768E584P14 SOLENOID		C I/16-630					H2					
1B21 F 0423B	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I		N/A			T		SP301-SO2-00
	SAFETY RELIEF VALVE	6A33	HARSH						N/A				
	301 768E584P14 SOLENOID		C I/16-630					H2					
1B21 F 0424A	AUTOMATIC DEPRESSURIZATION SYSTEM	SEITZ	DW-2	C	A1	I		N/A			T		SP301-SO2-00
	SAFETY RELIEF VALVE	6A33	HARSH						N/A				
	301 768E584P14 SOLENOID		C I/02-630					H2					

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S02-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S02-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD ELEV	EC CAT	FT	OPER DEMO SEAL	ACC RES TME DEMO H2/H2 DEMO	ACC/RT M LF/MI	QUALIFICATION SUMMARY
1B21 F 0424B	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P14 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/02-630		C	A1	I	N/A N/A H2	T	SP301-S02-00
1B21 F 0425A	AUTOMATIC DEPRESSURIZATION SYSTEM ADS VALVE 301 768E584P14 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/17-630		C	A1	I	N/A N/A H2	T	SP301-S02-00
1B21 F 0425B	AUTOMATIC DEPRESSURIZATION SYSTEM ADS VALVE 301 768E584P14 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/17-630		C	A1	I	N/A N/A H2	T	SP301-S02-00
1B21 F 0440A	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P15 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/01-630		C	A1	I	N/A N/A H2	T	SP301-S02-00
1B21 F 0440B	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P15 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/01-630		C	A1	I	N/A N/A H2	T	SP301-S02-00
1B21 F 0441A	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P15 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/15-630		C	A1	I	N/A N/A H2	T	SP301-S02-00
1B21 F 0441B	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P15 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/15-630		C	A1	I	N/A N/A H2	T	SP301-S02-00
1B21 F 0442A	AUTOMATIC DEPRESSURIZATION SYSTEM ADS VALVE 301 768E584P15 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/04-630		C	A1	I	N/A N/A H2	T	SP301-S02-00
1B21 F 0442B	AUTOMATIC DEPRESSURIZATION SYSTEM ADS VALVE 301 768E584P15 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/04-630		C	A1	I	N/A N/A H2	T	SP301-S02-00
1B21 F 0443A	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P15 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/17-630		C	A1	I	N/A N/A H2	T	SP301-S02-00
1B21 F 0443B	AUTOMATIC DEPRESSURIZATION SYSTEM SAFETY RELIEF VALVE 301 768E584P15 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/17-630		C	A1	I	N/A N/A H2	T	SP301-S02-00

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S02-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S02-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT ELEV	EC	FT	OPER DEMO SEAL	ACC RES H2/H2	TME	ACC/RT DEMO DEMO	QUALIFICATION M LF/MI	SUMMARY
1B21 F 0444A	AUTOMATIC DEPRESSURIZATION SYSTEM ADS VALVE 301 768E584P15 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/03-630	C	A1	I		N/A N/A H2			T	SP301-S02-00
1B21 F 0444B	AUTOMATIC DEPRESSURIZATION SYSTEM ADS VALVE 301 768E584P15 SOLENOID	SEITZ 6A33	DW-2 HARSH C I/03-630	C	A1	I		N/A N/A H2			T	SP301-S02-00

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-S05(A)-00
MANUFACTURER'S QUALIFICATION REPORT NO. (6) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Main Steam Isolation Valve (MSIV) Actuator/Solenoid
MANUFACTURER/MODEL NO. Sheffer/SA-A34 & ASCO/NP8320420 & NP832320
TESTED DEVICE MODEL NO. (Same as above)

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	DW-1	135°F	8,401 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-1	122°F	3,501 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	141/135°F	600 @ 30 Min.
Loss of HVAC (Non-Safety)	AB-7	189/ 88°F	49 Hours
RADIATION DOSE (RADS, TID)	DW-1	2.8×10^7 (5)	40 Years

ACCELERATED AGING TEMP./TIMES 140°C/35 Days (6)
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/5 Years (6)
LIFE-LIMITING COMPONENT EPDM Seals and O-rings (6)
TEST RADIATION DOSE (TID) Normal: 2.53×10^7 (5 Years), Accident: 1.21×10^7 (6)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED (6)
EQUIPMENT CATEGORY (EC)	A1	1 Hour of close/stay closed operation + 7 days
FUNCTION TIME (FT)	C (1 Hours)	post-DBE of stay closed operation.
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	4 ± 0.5 Seconds	Closing times will be monitored during operation.

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED (6)	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	345°F	15
PRESSURE (PSIG)	DW-1	22.1	33	10.9
R.H. (%)	DW-1	100% (Steam)	100% (Steam)	N/A
SPRAY	DW-1	Up to elevation	Actual elevation is	N/A
SUBMERGENCE	DW-1	613'0"	above 630'	N/A
RADIATION (RADS)	DW-1	1.1×10^7 (1 Hr.) (7)	1.21×10^7	1.1×10^6

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise / 2/2/84
CHECKED BY Eddie B. Thomas Jr. 12-21-84
APPROVED BY [illegible] 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-S05(A)-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Value is for gamma radiation only.

   Neutron fluence is: 1.0×10^{15} Ntn/CM^2 (40-year TID).

6. Demonstrated values are based on those specified in the GE Pre-Test Evaluation (PTE), Product Analysis Report (PAR) and Product Performance Qualification Specification (PPQS), all done in accordance with GE Licensing Topical Report NEDE-24326-1-P dated January, 1983. Testing is scheduled for completion September 28, 1984.

7. Beta radiation is not significant since all parts susceptible to radiation are shielded by metal enclosures.

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-S05(B)-00
MANUFACTURER'S QUALIFICATION REPORT NO. (6) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Main Steam Isolation Valve (MSIV) Limit Switch & Terminal Box
MANUFACTURER/MODEL NO. NAMCO/EA740-50100, Rev. K
TESTED DEVICE MODEL NO EA740-80100, Rev. K

AGING SUMMARY

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	DW-1	135°F	8,401 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-1	122°F	3,501 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	141/135°F	600 @ 30 Min.
Loss of HVAC (Non-Safety)	AB-7	189/ 88°F	49 Hours
RADIATION DOSE (RADS, TID)	DW-1	2.8×10^7 (5)(2)	40 Years

ACCELERATED AGING TEMP./TIMES Limit Switch: 250°F/94 Days + 260°F/62 Days; Terminal Box: 150°C/28 Days (6)
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/5 Years (6)
LIFE-LIMITING COMPONENT Limit SW=EPDM O-ring Seal; Terminal BX=Neoprene Gasket (6)
TEST RADIATION DOSE (TID) 3.15×10^8 (6) (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Switch operation will be verified a minimum of once per week during aging and DBE testing.
FUNCTION TIME (FT)	I (100 Days)	100 Day Post-DBE Test
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	355°F	25
PRESSURE (PSIG)	DW-1	22.1	69	46.9
R.H. (%)	DW-1	100% (Steam)	100% (Steam)	N/A
SPRAY	DW-1	To Elev. 613'0"	Actual Elev. Above 630'	N/A
SUBMERGENCE	DW-1	To Elev. 613'0"	Actual Elev. Above 630'	N/A
RADIATION (RADS)	DW-1	2.7×10^8 (7)	$\sim 3.1 \times 10^8$ (2)	$.4 \times 10^8$

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise 12/2/84
CHECKED BY Eddie B Chambers 12-21-84
APPROVED BY M. A. Mathews 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-S05(B)-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Value is gamma only.

   Neutron fluence is: 1.0×10^{15} Ntn/CM^2 (40-year TID).

6. Demonstrated values are based on those specified in the GE Pre-Test Evaluation (PTE), Product Analysis Report (PAR) and Product Performance Qualification Specification (PPQS), all done in accordance with GE Licensing Topical Report NEDE-24326-1-P dated January, 1983. Testing is scheduled for completion September 28, 1984.

7. Beta radiation is not significant since all parts susceptible to radiation are shielded by metal enclosures.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S05-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S05-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES TME H2/H2	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1 1B21 F 0022A	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM		NATIONAL ACME	DW-1	C	A1	I LATER	N/A	LATER	T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-INBOARD		EA74050100	HARSH				N/A			
	79305 LIMIT SWITCHES(6)			C I/01-620			YES	H2			
2 1B21 F 0022A	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM		SHEFFER	DW-1	C	A1	C	N/A		T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE -INBOARD		SA-A34	HARSH				0004 SEC			
	301 105D4935 ACTUATOR			C I/00-630							
2 1B21 F 0022B	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM		SHEFFER	DW-1	C	A1	C	N/A		T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE -INBOARD		SA-A34	HARSH				0004 SEC			
	301 105D4935 ACTUATOR			C I/00-630							
1 1B21 F 0022B	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM		NATIONAL ACME	DW-1	C	A1	I LATER	N/A	LATER	T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-INBOARD		EA74050100	HARSH				N/A			
	79305 LIMIT SWITCHES(6)			C I/17-620			YES	H2			
2 1B21 F 0022C	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM		SHEFFER	DW-1	C	A1	C	N/A		T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE -INBOARD		SA-A34	HARSH				0004 SEC			
	301 105D4935 ACTUATOR			C I/00-630							
1 1B21 F 0022C	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM		NATIONAL ACME	DW-1	C	A1	I LATER	N/A	LATER	T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-INBOARD		EA74050100	HARSH				N/A			
	79305 LIMIT SWITCHES(6)			C I/01-620			YES	H2			
2 1B21 F 0022D	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM		SHEFFER	DW-1	C	A1	C	N/A		T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE -INBOARD		SA-A34	HARSH				0004 SEC			
	301 105D4935 ACTUATOR			C I/00-630							
1 1B21 F 0022D	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM		NATIONAL ACME	DW-1	C	A1	I LATER	N/A	LATER	T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-INBOARD		EA74050100	HARSH				N/A			
	79305 LIMIT SWITCHES(6)			C I/17-620			YES	H2			
2 1B21 F 0028A	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM		SHEFFER	AB-7	C	A1	C	N/A		T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE -OUTBOARD		SA-A34	HARSH				0004 SEC			
	301 105D4935 ACTUATOR			AXC/05-620							
1 1B21 F 0028A	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM		NATIONAL ACME	AB-7	C	A1	C LATER	N/A	LATER	T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-OUTBOARD		EA74050100	HARSH				N/A			
	79305 LIMIT SWITCHES(5)			AXC/05-620			YES				
2 1B21 F 0028B	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM		SHEFFER	AB-7	C	A1	C	N/A		T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE -OUTBOARD		SA-A34	HARSH				0004 SEC			
	301 105D4935 ACTUATOR			AXC/04-620							

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S05-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S05-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1 1B21 F 0028B	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	NATIONAL ACME	AB-7	C	A1	C	LATER	N/A		LATER	T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-OUTBOARD	EA74050100	HARSH					N/A				
	79305 LIMIT SWITCHES(5)		AXC/04-620				YES					
2 1B21 F 0028C	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	SHEFFER	AB-7	C	A1	C		N/A			T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE -OUTBOARD	SA-A34	HARSH					0004 SEC				
	301 105D4935 ACTUATOR		AXC/06-620									
1 1B21 F 0028C	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	NATIONAL ACME	AB-7	C	A1	C	LATER	N/A		LATER	T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-OUTBOARD	EA74050100	HARSH					N/A				
	79305 LIMIT SWITCHES(5)		AXC/06-620				YES					
2 1B21 F 0028D	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	SHEFFER	AB-7	C	A1	C		N/A			T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE -OUTBOARD	SA-A34	HARSH					0004 SEC				
	301 105D4935 ACTUATOR		AXC/05-620									
1 1B21 F 0028D	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	NATIONAL ACME	AB-7	C	A1	C	LATER	N/A		LATER	T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-OUTBOARD	EA74050100	HARSH					N/A				
	79305 LIMIT SWITCHES(5)		AXC/05-620				YES					
1B21 F 0460	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	ASCO	DW-1	C	A1	C		N/A			T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-INBOARD	HTX8320A20V/832320V	HARSH					N/A				
	301 105D4935 TEST/PILOT SOLENOIDS		C I/00-630									
1B21 F 0461	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	ASCO	DW-1	C	A1	C		N/A			T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-INBOARD	HTX8320A20V/832320V	HARSH					N/A				
	301 105D4935 TEST/PILOT SOLENOIDS		C I/00-630									
1B21 F 0462	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	ASCO	DW-1	C	A1	C		N/A			T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-INBOARD	HTX8320A20V/832320V	HARSH					N/A				
	301 105D4935 TEST/PILOT SOLENOIDS		C I/00-630									
1B21 F 0463	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	ASCO	DW-1	C	A1	C		N/A			T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-INBOARD	HTX8320A20V/832320V	HARSH					N/A				
	301 105D4935 TEST/PILOT SOLENOIDS		C I/00-630									
1B21 F 0480	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	ASCO	AB-7	C	A1	C		N/A			T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-OUTBOARD	HTX8320A20V/832320V	HARSH					N/A				
	301 105D4935 TEST/PILOT SOLENOIDS		AXC/05-620									
1B21 F 0481	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	ASCO	AB-7	C	A1	C		N/A			T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-OUTBOARD	HTX8320A20V/832320V	HARSH					N/A				
	301 105D4935 TEST/PILOT SOLENOIDS		AXC/05-620									

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S05-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S05-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1B21 F 0482	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	ASCO	AB-7	C	A1	C		N/A			T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-OUTBOARD	HTX8320A20V/832320V	HARSH					N/A				
	301 105D4935 TEST/PILOT SOLENOIDS		AXC/05-620									
1B21 F 0483	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM	ASCO	AB-7	C	A1	C		N/A			T	SP301-S05-00
	MAIN STEAM ISOLATION VALVE-OUTBOARD	HTX8320A20V/832320V	HARSH					N/A				
	301 105D4935 TEST/PILOT SOLENOIDS		AXC/05-620									

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-S06-00
MANUFACTURER'S QUALIFICATION REPORT NO. (5) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION MSIV - Leakage Control System Heater
MANUFACTURER/MODEL NO. GE (LOMPAC)/47D518673
TESTED DEVICE MODEL NO. (Same)

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-4	113°F	8,372 Hours
AVERAGE	AB-4	101°F	336,992 Hours
MINIMUM	AB-4	86°F	3,489 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Plant Shutdown	AB-4	147/113°F	111 @ 13.5 Hours
Loss of HVAC (Non-Safety)	AB-4	134/113°F	1 @ 49 Hours
RADIATION DOSE (RADS, TID)	AB-4	3×10^5 (2)	40 Years

ACCELERATED AGING TEMP./TIMES (5) 250°F/6 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL (5) 40 Years/40 Years
LIFE-LIMITING COMPONENT (5) None
TEST RADIATION DOSE (TID) (5) 4.6×10^7 (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	(5) Operation verified during test.
FUNCTION TIME (FT)	I (100 Days)	(5) 100 Days
ACCURACY (ACC) (4)	N/A	(5) N/A
RESPONSE TIME (RT)	N/A	(5) N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-4	160°F	(5) 265°F	105
PRESSURE (PSIG)	AB-4	0.6	(5) 1.8	1.2
R.H. (%)	AB-4	100 (Steam)	(5) 100 (Steam)	N/A
SPRAY	AB-4	N/A	(5) N/A	N/A
SUBMERGENCE	AB-4	N/A	(5) N/A	N/A
RADIATION (RADS)	AB-4	4.1×10^7	(5) 4.57×10^7 (2)	0.47×10^7

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise /
CHECKED BY Eddie B. Thomas 12-21-84
APPROVED BY [illegible] 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-S06-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Final qualification report has been received and is under review. Expected completion date is March 15, 1984.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S06-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S06-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT SEAL	OPER DEMO	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI DEMO	SUMMARY
1E32 B 0001A	MSIV LEAKAGE CONTROL SYSTEM MSIV-LCS HEATER 301 21A3581 HEATER	GE/LOMPOC 47D518673	AB-4 HARSH AXC/04-620	B	A1	I		N/A N/A		T	SP301-S06-00
1E32 B 0001E	MSIV LEAKAGE CONTROL SYSTEM MSIV-LCS HEATER 301 21A3581 HEATER	GE/LOMPOC 47D518673	AB-4 HARSH AXC/04-620	B	A1	I		N/A N/A		T	SP301-S06-00
1E32 B 0001J	MSIV LEAKAGE CONTROL SYSTEM MSIV-LCS HEATER 301 21A3581 HEATER	GE/LOMPOC 47D518673	AB-4 HARSH AXC/04-620	B	A1	I		N/A N/A		T	SP301-S06-00
1E32 B 0001N	MSIV LEAKAGE CONTROL SYSTEM MSIV-LCS HEATER 301 21A3581 HEATER	GE/LOMPOC 47D518673	AB-4 HARSH AXC/04-620	B	A1	I		N/A N/A		T	SP301-S06-00

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-S07-00
MANUFACTURER'S QUALIFICATION REPORT NO. (5) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION MSIV-Leakage Control System Blower
MANUFACTURER/MODEL NO. GE (LOMPAC)/47B518673
TESTED DEVICE MODEL NO. (same)

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-4	113°F	8,372 Hours
AVERAGE	AB-4	101°F	336,992 Hours
MINIMUM	AB-4	86°F	3,489 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Plant Shutdown	AB-4	147/113°F	111 @ 13.5 Hours
Loss of HVAC (Non-Safety)	AB-4	134/113°F	1 @ 49 Hours
RADIATION DOSE (RADS, TID)	AB-4	3×10^5 (2)	40 Years

ACCELERATED AGING TEMP./TIMES (5) 220°F/73.5 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL (5) 40 Years/40 Years
LIFE-LIMITING COMPONENT (5) None
TEST RADIATION DOSE (TID) (5) 4.6×10^7 (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	(5) Operation will be verified during test.
FUNCTION TIME (FT)	I (100 Days)	(5) 100 Days
ACCURACY (ACC) (4)	N/A	(5) N/A
RESPONSE TIME (RT)	N/A	(5) N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-4	160°F	(5) 290°F	40°F
PRESSURE (PSIG)	AB-4	0.6	(5) 1.0	0.4
R.H. (%)	AB-4	100 (Steam)	(5) 100 (Steam)	N/A
SPRAY	AB-4	N/A	(5) N/A	N/A
SUBMERGENCE	AB-4	N/A	(5) N/A	N/A
RADIATION (RADS)	AB-4	4.1×10^7	(5) 4.57×10^7 (2)	0.4×10^7

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise 12/2/84
CHECKED BY Eddie B. Thomas Jr. 12-21-84
APPROVED BY T. A. Mathews 12/17/84

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN A HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-S07-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Equipment is under test. Final qualification report expected on June 1, 1984.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S07-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S07-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI	SUMMARY
1E32 C 0001	MSIV LEAKAGE CONTROL SYSTEM INBOARD AIR BLOWER 301 21A3762 BLOWER	GE/LOMPOC 47B518664	AB-4 HARSH AXC/04-620	C	A1	I	N/A N/A		T	SP301-S07-00
1E32 C 0002B	MSIV LEAKAGE CONTROL SYSTEM OUTBOARD AIR BLOWER 301 21A3762 BLOWER	GE/LOMPOC 47A518664	AB-4 HARSH AXC/06-620	C	A1	I	N/A N/A		T	SP301-S07-00
1E32 C 0002F	MSIV LEAKAGE CONTROL SYSTEM OUTBOARD AIR BLOWER 301 21A3762 BLOWER	GE/LOMPOC 47A518664	AB-4 HARSH AXC/04-620	C	A1	I	N/A N/A		T	SP301-S07-00

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-S08/S09-00
MANUFACTURER'S QUALIFICATION REPORT NO. NEDC-30205 REV. 0
QUALIFICATION METHOD Test and Analysis
EQUIPMENT DESCRIPTION RCIC Turbine Assembly
MANUFACTURER/MODEL NO. Terry Corp./GS-2N
TESTED DEVICE MODEL NO. Same

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-3	123°F	8,408 Hours
AVERAGE	AB-3	102°F	338,440 Hours
MINIMUM	AB-3	66°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC (Non-Safety)	AB-3	143/123°F	1 @ 49 Hours
RADIATION DOSE (RADS, TID)	AB-3	9.4×10^3 (2)	40 Years

ACCELERATED AGING TEMP./TIMES See Note 5
QUALIFIED LIFE/MAINTENANCE INTERVAL See Note 5
LIFE-LIMITING COMPONENT See Note 5
TEST RADIATION DOSE (TID) 1×10^4 (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	None (5)
FUNCTION TIME (FT)	E (12 Hours)	12 Hours (5)
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-3	155°F	207°F	52
PRESSURE (PSIG)	AB-3	3.0	2.0	None (5)
R.H. (%)	AB-3	100 (Steam)	100 (5)	N/A
SPRAY	AB-3	N/A	N/A	N/A
SUBMERGENCE	AB-3	N/A	N/A	N/A
RADIATION (RADS)	AB-3	4.46×10^4	None (5)	None (5)

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise 12/2/84
CHECKED BY Eddie B. Thomas Jr. 12-21-84
APPROVED BY T. A. Plathney 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-S08/S09-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. This report contains 10 "Notices of Deviations" which describe anamolies during testing. These NOD's are being reviewed along with recommendations for corrective action to achieve qualification of failed accessories.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S08-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S08-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT ELEV	EC DEMO SEAL	FT	OPER ACC RES TME DEMO H2/H2 DEMO	ACC/RT M LF/MI	QUALIFICATION SUMMARY
1E51 C 0001	REACTOR CORE ISOLATION COOLING RCIC PUMP 301 21A9526 PUMP	BINGHAM PUMP CO 6X6X101/2 CP	AB-3 HARSH AXB/06-574	B	A1	E	N/A N/A	C	SP301-S08-00
1E51 C 0002	REACTOR CORE ISOLATION COOLING PROCESS INSTRUMENT EQUIPMENT 301 21A9526 RCIC TURBINE	TERRY CORP GS-2N	AB-3 HARSH AXB/06-574	B	A1	E	N/A N/A	C	SP301-S08-00
1 1E51 C 0002	REACTOR CORE ISOLATION COOLING PROCESS INSTRUMENT EQUIPMENT 301 21A9526 RCIC TURB GOVERNOR- REMOTE MOUNTING PNL	WOODWARD GOVERNOR CO EG-M	AB-6 MILD AXA/06-574	B	A1	E	N/A N/A	T	SP301-S08-00

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S09-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S09-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT ELEV	EC FT SEAL	OPER DEMO	ACC RES TME H2/H2	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
3 1E51 F 0510	REACTOR CORE ISOLATION COOLING RCIC TURB TRIP THROTTLE VALVE 301 21A9526 LIMIT SWITCHES	MICRO SWITCH LS-PIA-2D	AB-3 HARSH AXB/06-574	B	A3		N/A N/A		C	SP301-S09-00
2 1E51 F 0510	REACTOR CORE ISOLATION COOLING RCIC TURB TRIP THROTTLE VALVE 301 21A9526 SOLENOID	TROMBETTA G206	AB-3 HARSH AXB/06-574	B	A3		N/A N/A		C	SP301-S09-00
1 1E51 F 0510	REACTOR CORE ISOLATION COOLING RCIC TURB TRIP THROTTLE VALVE 301 21A9526 OPERATOR-DC	LIMITORQUE SMB-000	AB-3 HARSH AXB/06-574	B	A3		N/A N/A		C	SP301-S09-00
1E51 F 0510	REACTOR CORE ISOLATION COOLING RCIC TURB TRIP THROTTLE 301 21A9526 VALVE	GIMPEL MACH WORKS P-2989	AB-3 HARSH AXB/06-574	B	A1	E	N/A N/A		C	SP301-S09-00

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP301-S11-00
MANUFACTURER'S QUALIFICATION REPORT NO. NEDC-30207 REV. (-) Oct. 1983
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Standby Liquid Control (SLC) explosive valve & replacement kit
MANUFACTURER/MODEL NO. Conax/1832-159-01 (valve), 1532-159-01 (replacement kit)
TESTED DEVICE MODEL NO. same

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-4	104	7731 hrs.
AVERAGE	CT-4	87	322,115 hrs.
MINIMUM	CT-4	62	3221 hrs.
ABNORMAL TEMP. TRANSIENTS (°F):			
Hot standby	CT-4	105	220cy @ 120 hrs.
Loss of HVAC (non-safety)	CT-4	131/104	1cy @ 49 hrs.
SRV Discharge	CT-4	120	108 cy @ 17 hrs.
RADIATION DOSE (RADS, TID)	CT-4	2.7×10^5 (2)	40 years

	GROUP I (6)	GROUP II (6)
ACCELERATED AGING TEMP/TIMES	220°F/59.5 days	160°F/35 days 20 hrs.
QUALIFIED LIFE/MAINTENANCE INTERVAL	40 yrs/40 yrs.	3 yrs/3yrs. (+2 yrs. shelf life)
LIFE-LIMITING COMPONENT	None	primer/trigger assembly
TEST RADIATION DOSE (TID)	1.35×10^6 rads	4.17×10^5 rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Valve opened (CV=13) during DBE per requirement
FUNCTION TIME (FT)	B (10 min.)	(7)
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-4	185	200	15°
PRESSURE (PSIG)	CT-4	12	16.5	4.5
R.H. (%)	CT-4	100	100 (steam injection)	N/A
SPRAY	CT-4	(5)	periodic spray	N/A
SUBMERGENCE	CT-4	N/A	N/A	N/A
RADIATION (RADS)	CT-4	(8)	(8) (2)	

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise / 2/22/84
CHECKED BY [illegible] / 2/16/84
APPROVED BY [illegible] / 3/17/84

QUALIFICATION SUMMARY (FILE NO.) SP301-S11-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements: N/A, this device performs an on/off function for which accuracy requirements are not pertinent.

5. Zone CT-4 is subject to run-off and dripping from areas above that are subject to containment spray.

6. Group I consists of the valve body and the cable assembly and connectors (excluding the mating connector on the primer chamber assembly). They are designed to survive multiple firings of the explosive valve.
   Group II is the Model 1532-159-01 replacement kit parts including the inlet fitting, the trigger body sub-assembly, the primer chamber assembly (including the primer side of the connector which mates to the cable assembly), and O-ring seals. These parts are expended when the valve is operated (fired) and must be replaced after valve operation.

7. The first (10-minute) DBE ramp was successfully completed. After the chamber was brought down to ambient conditions, the second (70 minute) DBE test was conducted. At 24 minutes, 10 seconds into the second DBE test the valve self-actuated. Valve self-actuation during DBE is postulated to be a result of deterioration of the explosive from exposure to temperature. The primer withstood 34 minutes of DBE, a margin of 24 minutes beyond maximum system requirements (10 minutes). In its deteriorated condition, the primer explosive charge still opened the valve successfully. Inadvertent operation is not a safety concern; therefore, the valve is considered qualified.

QUALIFICATION SUMMARY (FILE NO.) SP301-S11-00

SUPPLEMENTAL NOTES (Continued):

8. The following tabulation provides the Accident Summary: Radiation Required Envelope (Maximum Value), Qualification Demonstrated (Maximum Value), and Margin for Group I and II components (see Note 6, above). The DBE for which the SLC valve must operate for 10 minutes plus one hour margin is the ATWS event. For ATWS the radiation dose is considered as 10% of the LOCA dose provided.

Description	Group I (40 yrs.)		Group II (3 yrs.)	
	Gamma (Rads)	Beta (Rads)	Gamma (Rads)	Beta (Rads)
LOCA (1 hr.)	6.3×10^5	3.8×10^2	6.3×10^5	3.8×10^2
ATWS=10% x LOCA (1hr.)	6.3×10^4	3.8×10^1	6.3×10^4	3.8×10^1
Required Envelope (Max Value) (gamma & beta)	6.3×10^4	insignificant	6.3×10^4	insignificant
Test Radiation Dose	1.35×10^6	--	4.17×10^5	--
Less Normal Dose	2.71×10^5 (40 yrs)	N/A	2.0×10^4 (3 yrs)	N/A
Accident Qualification Demonstrated (Max. Value)	1.08×10^6	--	3.97×10^5	--
Less Accident Required Envelope	6.3×10^4	--	6.3×10^4	--
MARGIN	1.02×10^6 (94%)		3.34×10^5 (84%)	

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S11-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S11-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI DEMO	SUMMARY
1C41 F 0004A	STANDBY LIQUID CONTROL SYSTEM	CONAX CO	CT-4	A	A1 B	YES	N/A	YES	T 40Y	SP301-S11-00
	SLC INITIATION	1832-159-01	HARSH				N/A		03Y	
	301 21A9370AB SQUIBB VALVE		C 0/16-642							
1C41 F 0004B	STANDBY LIQUID CONTROL SYSTEM	CONAX CO	CT-4	A	A1 B	YES	N/A	YES	T 40Y	SP301-S11-00
	SLC INITIATION	1832-159-01	HARSH				N/A		03Y	
	301 21A9370AB SQUIBB VALVE		C 0/16-642							

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-S12-00
MANUFACTURER'S QUALIFICATION REPORT NO. NEDC-30208 REV. October 1983
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Hydraulic Control Unit w/ 3-way Scram Solenoid Pilot Valve
MANUFACTURER/MODEL NO. G.E. 767E800G001 (HCU)/ASCO HVA-176-186-1 (SSPV)
TESTED DEVICE MODEL NO. Same

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-3	104	7731 hrs.
AVERAGE	CT-3	87	322,115 hrs.
MINIMUM	CT-3	62	3221 hrs.
ABNORMAL TEMP. TRANSIENTS (°F):			
Hot Standby	CT-3	105	220cy @ 120 hrs
Loss of HVAC	CT-3	131	1cy @ 49 hrs.
SRV Discharge	CT-3	120	108cy @ 17 hrs.
RADIATION DOSE (RADS, TID)	CT-3	2.71×10^5 (2)	40 yrs.

ACCELERATED AGING TEMP./TIMES 165°F 1440 hrs.
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 yrs./5yrs
LIFE-LIMITING COMPONENT Buna - N Main Diaphragm, Viton Core Seal
TEST RADIATION DOSE (TID) 4×10^6 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A2	Valve is normally energized & de-energized following ~~an accident.~~
FUNCTION TIME (FT)	E (12 hrs.)	14 hrs.
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	~~SSPV - .045 SECS~~ HCU - 2 SECS	SSPV .033 SECS Max; HCU 1.082 SECS Max.

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-3	185	215	30
PRESSURE (PSIG)	CT-3	12	17	5
R.H. (%)	CT-3	100 (steam)	100 (steam)	N/A
SPRAY	CT-3	(5)	tested submerged	N/A
SUBMERGENCE	CT-3	not required	tested submerged	N/A
RADIATION (RADS)	CT-3	6.3×10^5 (6)	3.73×10^6 (2)	3.1×10^6

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise 12/16/84
CHECKED BY Eddie B. Thomas 12/29/84
APPROVED BY [illegible] 1-3-84

QUALIFICATION SUMMARY (FILE NO.) SP 301-S12-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements: N/A

5. (A) Zone CT-3 is subject to Pool Swell Spray & Froth to elevation 623'4" (2'10" above the platform). The HCU's are located in an area where the platform is solid. The SSPV's are approximately 8'5" above the platform. Therefore, pool swell spray & froth is not a problem.

   (B) Zone CT-3 may be subject to run-off and dripping from areas above that are subject to containment spray. The SSPV's were tested for submergence for 2 hours.

6. The 1 hour accident dose was chosen based on a functional time of 30 seconds for DBE (large break) and 60 seconds for ATWS (ARI function). The 12 hour function time is for small break LOCA during which the fuel is not uncovered. Thus, there is no accident radiation dose for small break.

   The beta accident dose at 1 hour is 3 orders of magnitude less than the gamma dose and is therefore insignificant.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-S12-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-S12-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	MANUFACTURER / MODEL / EQUIP. DESCRIPTION	ZONE / LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT M	QUALIFICATION LF/MI	SUMMARY
1C11 D 0001	REACTOR PROTECTION SYSTEM	GE	CT-3	A	A2	E	YES	N/A	YES	T 40Y	SP301-S12-00
	CRD-HCV/SCRAM SOLENOID PILOT VALVE	767E800G001	HARSH					0002 SEC		05Y	
	301 922D138 SOLENOID(TYPICAL-177CRDS-2 SSPV PER CRD C 0/14-620										

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-C01-00
MANUFACTURER'S QUALIFICATION REPORT NO. (See Note 7) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Differential Pressure/Level/Pressure Transmitter
MANUFACTURER/MODEL NO. Rosemount/1152 and 1152-T0280
TESTED DEVICE MODEL NO. Similar

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-9	107°F	8,408 Hours
AVERAGE	AB-9	93°F	338,440 Hours
MINIMUM	AB-9	86°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC (Non-Safety)	CT-3	131/104°F	1 @ 49 Hours
Hot Standby	CT-3	105/104°F	220 @ 120 Hours
SRV Discharge	CT-3	120°F Max	108 @ 17 Hours
RADIATION DOSE (RADS, TID)	CT-3	2.71×10^5 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 100°C/90 Days (7)
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/16.6 Years (7)
LIFE-LIMITING COMPONENT Operational Amplifier (Glass Encapsulated Silicon) (7)
TEST RADIATION DOSE (TID) 2.4×10^8 (7) (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	(See Note 7)
FUNCTION TIME (FT)	I (100 Days)	(See Note 7)
ACCURACY (ACC) (4)	(4)	(See Note 7)
RESPONSE TIME (RT)	0.2 Seconds	(See Note 7)

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-9	217°F	232°F (7)	15
PRESSURE (PSIG)	CT-3	12 PSIG	16.5 PSIG (7)	4.5
R.H. (%)	CT-3/AB-9	100 (Steam)	100 (Steam) (7)	N/A
SPRAY	CT-3	(5)	Spray & Froth (7)	N/A
SUBMERGENCE	CT-3	N/A	N/A (7)	N/A
RADIATION (RADS)	CT-3	1.8×10^7 (6)	2.397×10^8 (2)	2.2×10^8

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise 12-2-84
CHECKED BY Eddie B. Thomas Jr. 12-16-84
APPROVED BY [illegible] 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-C01-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   Per the GE Functional Performance Requirements (FPR) document which is done by the system's engineer for each (tag no.) device. The FPR is included in the final qualification report.

5. Zone CT-3 is subject to a) pool swell spray and froth to elevation 623'4" (2'10" above the platform), and b) run-off and dripping from areas above that are subject to containment spray.

6. Gamma TID only is provided since all components susceptible to beta radiation are protected by a metal enclosure.

7. Documentation has been received and reviewed, outlining a test program in accordance with GE LTR NEDE 24326-1-P (January, 1983). The test program is scheduled for completion by November 30, 1984.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C01-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C01-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO DEMO	QUALIFICATION M LF/MI	SUMMARY
1B21 N 0062A	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	C	A1	I		.005	T	SP301-C01-00
	REACTOR PRESSURE	1152GP9E22T0280PB	HARSH					.200 SEC		
	301 169C8394 PRESSURE TRANSMITTER		C 0/02-620			YES	H2			
1B21 N 0062B	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	C	A1	I		.005	T	SP301-C01-00
	REACTOR PRESSURE	1152GP9E22T0280PB	HARSH					.200 SEC		
	301 169C8394 PRESSURE TRANSMITTER		C 0/11-620			YES	H2			
1B21 N 0067C	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	C	A1	I		.005	T	SP301-C01-00
	DRYWELL PRESS	1152AP5N22T0280PB	HARSH					.200 SEC		
	301 169C8969 PRESSURE TRANSMITTER		C 0/07-620			YES	H2			
1B21 N 0067G	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	C	A1	I		.005	T	SP301-C01-00
	DRYWELL PRESS	1152AP5N22T0280PB	HARSH					.200 SEC		
	301 169C8969 PRESSURE TRANSMITTER		C 0/07-620			YES	H2			
1B21 N 0067L	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	C	A1	I		.005	T	SP301-C01-00
	DRYWELL PRESS	1152AP5N22T0280PB	HARSH					.200 SEC		
	301 169C8969 PRESSURE TRANSMITTER		C 0/16-620			YES	H2			
1B21 N 0067R	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	C	A1	I		.005	T	SP301-C01-00
	DRYWELL PRESS	1152AP5N22T0280PB	HARSH					.200 SEC		
	301 169C8969 PRESSURE TRANSMITTER		C 0/16-620			YES	H2			
1B21 N 0068A	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	C	A1	D		.022	T	SP301-C01-00
	REACTOR PRESS	1152GP9A22PB	HARSH					.200 SEC		
	301 169C8393 PRESSURE TRANSMITTER		C 0/02-620			YES	H2			
1B21 N 0068B	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	C	A1	D		.022	T	SP301-C01-00
	REACTOR PRESS	1152GP9A22PB	HARSH					.200 SEC		
	301 169C8393 PRESSURE TRANSMITTER		C 0/11-620			YES	H2			
1B21 N 0068E	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	C	A1	D		.022	T	SP301-C01-00
	REACTOR PRESS	1152GP9A22PB	HARSH					.200 SEC		
	301 169C8393 PRESSURE TRANSMITTER		C 0/02-620			YES	H2			
1B21 N 0068F	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	C	A1	D		.022	T	SP301-C01-00
	REACTOR PRESS	1152GP9A22PB	HARSH					.200 SEC		
	301 169C8393 PRESSURE TRANSMITTER		C 0/11-620			YES	H2			
1B21 N 0080A	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	C	A1	I		.005	T	SP301-C01-00
	REACTOR VESSEL WATER LEVEL	1152DP4E22T0280PB	HARSH					.500 SEC		
	301 169C8392 LEVEL TRANSMITTER		C 0/02-620			YES	H2			

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C01-00 AS OF 00636 03/22/84

SELECT :

SORT : 01

TITLE : EQRL SP301-C01-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	LF/MI	QUALIFICATION SUMMARY
1B21 N 0080B	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	C	A1	I		.005			T		SP301-C01-00
	REACTOR VESSEL WATER LEVEL		1152DP4E22T0280PB	HARSH					.500	SEC				
	301 169C8392	LEVEL TRANSMITTER		C 0/11-620				YES	H2					
1B21 N 0080C	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	C	A1	I		.005			T		SP301-C01-00
	REACTOR VESSEL WATER LEVEL		1152DP4E22T0280PB	HARSH					.500	SEC				
	301 169C8392	LEVEL TRANSMITTER		C 0/07-620				YES	H2					
1B21 N 0080D	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	C	A1	I		.005			T		SP301-C01-00
	REACTOR VESSEL WATER LEVEL		1152DP4E22T0280PB	HARSH					.500	SEC				
	301 169C8392	LEVEL TRANSMITTER		C 0/16-620				YES	H2					
1B21 N 0091A	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	C	A1	I		.010			T		SP301-C01-00
	REACTOR VESSEL WATER LEVEL		1152DP5ET0280PB	HARSH					.200	SEC				
	301 169C8392	LEVEL TRANSMITTER		C 0/02-620				YES	H2					
1B21 N 0091B	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	C	A1	I		.010			T		SP301-C01-00
	REACTOR VESSEL WATER LEVEL		1152DP5ET0280PB	HARSH					.200	SEC				
	301 169C8392	LEVEL TRANSMITTER		C 0/11-620				YES	H2					
1B21 N 0091E	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	C	A1	I		.010			T		SP301-C01-00
	REACTOR VESSEL WATER LEVEL		1152DP5ET0280PB	HARSH					.200	SEC				
	301 169C8392	LEVEL TRANSMITTER		C 0/02-620				YES	H2					
1B21 N 0091F	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	C	A1	I		.010			T		SP301-C01-00
	REACTOR VESSEL WATER LEVEL		1152DP5ET0280PB	HARSH					.200	SEC				
	301 169C8392	LEVEL TRANSMITTER		C 0/11-620				YES	H2					
1B21 N 0094A	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	C	A1	I		.005			T		SP301-C01-00
	DRYWELL PRESSURE		1152AP5E22T0280PB	HARSH					.200	SEC				
	301 169C8969	PRESSURE TRANSMITTER		C 0/02-620				YES	H2					
1B21 N 0094B	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	C	A1	I		.005			T		SP301-C01-00
	DRYWELL PRESSURE		1152AP5E22T0280PB	HARSH					.200	SEC				
	301 169C8969	PRESSURE TRANSMITTER		C 0/11-620				YES	H2					
1B21 N 0094E	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	C	A1	I		.005			T		SP301-C01-00
	DRYWELL PRESSURE		1152AP5E22T0280PB	HARSH					.200	SEC				
	301 169C8969	PRESSURE TRANSMITTER		C 0/02-620				YES	H2					
1B21 N 0094F	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	C	A1	I		.005			T		SP301-C01-00
	DRYWELL PRESSURE		1152AP5E22T0280PB	HARSH					.200	SEC				
	301 169C8969	PRESSURE TRANSMITTER		C 0/11-620				YES	H2					

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C01-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C01-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT OPER DEMO SEAL	ACC RES TME H2/H2 DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1B33 N 0014A	REACTOR RECIRC VALVE FLOW CONTROL RECIRC LOOP "A" FLOW 301 169C8391 DIFFERENTIAL	ROSEMOUNT 1152DP5D22PB PRESSURE TRANSMITTE	CT-3 HARSH C 0/12-620	C	A2	I YES	.010 0001 SEC H2		T	SP301-C01-00
1B33 N 0014B	REACTOR RECIRC VALVE FLOW CONTROL RECIRC LOOP "A" FLOW 301 169C8391 DIFFERENTIAL	ROSEMOUNT 1152DP5D22PB PRESSURE TRANSMITTE	CT-3 HARSH C 0/12-620	C	A2	I YES	.010 0001 SEC H2		T	SP301-C01-00
1B33 N 0014C	REACTOR RECIRC VALVE FLOW CONTROL RECIRC LOOP "A" FLOW 301 169C8391 DIFFERENTIAL	ROSEMOUNT 1152DP5D22PB PRESSURE TRANSMITTE	CT-3 HARSH C 0/07-620	C	A2	I YES	.010 0001 SEC H2		T	SP301-C01-00
1B33 N 0014D	REACTOR RECIRC VALVE FLOW CONTROL RECIRC LOOP "A" FLOW 301 169C8391 DIFFERENTIAL	ROSEMOUNT 1152DP5D22PB PRESSURE TRANSMITTE	CT-3 HARSH C 0/07-620	C	A2	I YES	.010 0001 SEC H2		T	SP301-C01-00
1B33 N 0024A	REACTOR RECIRC VALVE FLOW CONTROL RECIRC LOOP "B" FLOW 301 169C8391 DIFFERENTIAL	ROSEMOUNT 1152DP5D22PB PRESSURE TRANSMITTE	CT-3 HARSH C 0/01-620	C	A2	I YES	.010 0001 SEC H2		T	SP301-C01-00
1B33 N 0024B	REACTOR RECIRC VALVE FLOW CONTROL RECIRC LOOP "B" FLOW 301 169C8391 DIFFERENTIAL	ROSEMOUNT 1152DP5D22PB PRESSURE TRANSMITTE	CT-3 HARSH C 0/01-620	C	A2	I YES	.010 0001 SEC H2		T	SP301-C01-00
1B33 N 0024C	REACTOR RECIRC VALVE FLOW CONTROL RECIRC LOOP "B" FLOW 301 169C8391 DIFFERENTIAL	ROSEMOUNT 1152DP5D22PB PRESSURE TRANSMITTE	CT-3 HARSH C 0/17-620	C	A2	I YES	.010 0001 SEC H2		T	SP301-C01-00
1B33 N 0024D	REACTOR RECIRC VALVE FLOW CONTROL RECIRC LOOP "B" FLOW 301 169C8391 DIFFERENTIAL	ROSEMOUNT 1152DP5D22PB PRESSURE TRANSMITTE	CT-3 HARSH C 0/17-620	C	A2	I YES	.010 0001 SEC H2		T	SP301-C01-00
1E12 N 0062A	RESIDUAL HEAT REMOVAL SYSTEM CONTAINMENT PRESSURE 301 169C8969 PRESSURE TRANSMITTER	ROSEMOUNT 1152AP5E22T0280PB	CT-3 HARSH C 0/02-620	C	A1	I YES	.024 .200 SEC H2		T	SP301-C01-00
1E12 N 0062B	RESIDUAL HEAT REMOVAL SYSTEM CONTAINMENT PRESSURE 301 169C8969 PRESSURE TRANSMITTER	ROSEMOUNT 1152AP5E22T0280PB	CT-3 HARSH C 0/11-620	C	A1	I YES	.024 .200 SEC H2		T	SP301-C01-00
1E12 N 0062C	RESIDUAL HEAT REMOVAL SYSTEM CONTAINMENT PRESSURE 301 169C8969 PRESSURE TRANSMITTER	ROSEMOUNT 1152AP5E22T0280PB	CT-3 HARSH C 0/02-620	C	A1	I YES	.024 .200 SEC H2		T	SP301-C01-00

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C01-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C01-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	MANUFACTURER / MODEL / EQUIP. DESCRIPTION	ZONE / LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI	SUMMARY
1E12 N 0062D	RESIDUAL HEAT REMOVAL SYSTEM	ROSEMOUNT	CT-3	C	A1	I		.024		T	SP301-C01-00
	CONTAINMENT PRESSURE	1152AP5E22T0280PB	HARSH					.200 SEC			
	301 169C8969 PRESSURE TRANSMITTER		C 0/11-620				YES	H2			
1E31 N 0075A	LEAK DETECTION SYSTEM	ROSEMOUNT	AB-6	C	A4	B		.010		T	SP301-C01-00
	RWCU FLOW TO COND	1152DP5A22PB	MILD					.200 SEC			
	301 169C8391 DIFFERENTIAL	PRESSURE TRANSMITTE	AXA/06-568								
1E31 N 0075B	LEAK DETECTION SYSTEM	ROSEMOUNT	AB-9	C	A1	B		.010		T	SP301-C01-00
	RWCU FLOW TO COND	1152DP5A22PB	HARSH					.200 SEC			
	301 169C8391 DIFFERENTIAL	PRESSURE TRANSMITTE	AXB/06-599				YES				
1E31 N 0076A	LEAK DETECTION SYSTEM	ROSEMOUNT	CT-3	C	A1	B		.010		T	SP301-C01-00
	RWCU SUCTION FROM RECIRC FLOW	1152DP5A22PB	HARSH					.200 SEC			
	301 169C8391 DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/02-620				YES				
1E31 N 0076B	LEAK DETECTION SYSTEM	ROSEMOUNT	CT-3	C	A1	B		.010		T	SP301-C01-00
	RWCU SUCTION FROM RECIRC FLOW	1152DP5A22PB	HARSH					.200 SEC			
	301 169C8391 DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/01-620				YES				
1E31 N 0077A	LEAK DETECTION SYSTEM	ROSEMOUNT	AB-6	C	A4	B		.010		T	SP301-C01-00
	RWCU RETURN TO FW FLOW	1152DP5A22PB	MILD					.200 SEC			
	301 169C8391 DIFFERENTIAL	PRESSURE TRANSMITTE	AXA/06-568								
1E31 N 0077B	LEAK DETECTION SYSTEM	ROSEMOUNT	AB-9	C	A1	B		.010		T	SP301-C01-00
	RWCU RETURN TO FW FLOW	1152DP5A22PB	HARSH					.200 SEC			
	301 169C8391 DIFFERENTIAL	PRESSURE TRANSMITTE	AXB/06-599				YES				
1E31 N 0084A	LEAK DETECTION SYSTEM	ROSEMOUNT	CT-3	C	A1	E		.017		T	SP301-C01-00
	RCIC/RHR STEAM FLOW	1152DP5N22T0280PB	HARSH					.200 SEC			
	301 169C8392 DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/02-620				YES	H2			
1E31 N 0084B	LEAK DETECTION SYSTEM	ROSEMOUNT	CT-3	C	A1	E		.017		T	SP301-C01-00
	RCIC/RHR STEAM FLOW	1152DP5N22T0280PB	HARSH					.200 SEC			
	301 169C8392 DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/01-620				YES	H2			
1E31 N 0085A	LEAK DETECTION SYSTEM	ROSEMOUNT	CT-3	C	A1	E		.020		T	SP301-C01-00
	RCIC/RHR STEAM FLOW	1152GP7N22T0280PB	HARSH					.200 SEC			
	301 169C8394 PRESSURE TRANSMITTER		C 0/02-620				YES	H2			
1E31 N 0085B	LEAK DETECTION SYSTEM	ROSEMOUNT	CT-3	C	A1	E		.020		T	SP301-C01-00
	RCIC/RHR STEAM FLOW	1152GP7N22T0280PB	HARSH					.200 SEC			
	301 169C8394 PRESSURE TRANSMITTER		C 0/01-620				YES	H2			

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C01-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C01-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1E32 N 0050	MSIV LEAKAGE CONTROL SYSTEM	ROSEMOUNT	CT-3	C	A1	I		.050			T		SP301-C01-00
	REACTOR PRESSURE	1152GP6N22T0280PB	HARSH					.200	SEC				
	301 169C8394 PRESSURE TRANSMITTER		C 0/02-620				YES	H2					
1E32 N 0058	MSIV LEAKAGE CONTROL SYSTEM	ROSEMOUNT	CT-3	C	A1	I		.050			T		SP301-C01-00
	REACTOR PRESSURE	1152GP6N22T0280PB	HARSH					.200	SEC				
	301 169C8394 PRESSURE TRANSMITTER		C 0/11-620				YES	H2					

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-C03-00
MANUFACTURER'S QUALIFICATION REPORT NO. (6) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Temperature Elements (Type E Thermocouples)
MANUFACTURER/MODEL NO. PYCO/102-9039-11
TESTED DEVICE MODEL NO. Same

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-5	130°F	8,408 Hours
AVERAGE	CT-5	119°F	338,440 Hours
MINIMUM	CT-5	94°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Plant Shutdown	AB-4	147/113°F	1 @ 13½ Hours
Loss of HVAC (Non-Safety)	AB-5	258/128°F	1 @ 49 Hours
SRV Discharge	CT-4, 5, 7, 8	120°F Max	108 @ 17 Hours
Plant Shutdown	AB-4	147/113°F	111 @ 13½ Hours
RADIATION DOSE (RADS, TID)	CT-5	2.8×10^7 Rads	40 Years

ACCELERATED AGING TEMP./TIMES 150°C/17.2 Days (6)
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/40 Years (6)
LIFE-LIMITING COMPONENT None (6)
TEST RADIATION DOSE (TID) Normal: 3.1×10^8 (6)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	(See Note 6)
FUNCTION TIME (FT)	F (24 Hours)	(See Note 6)
ACCURACY (ACC) (4)	0.5%	(See Note 6)
RESPONSE TIME (RT)	2 Seconds	(See Note 6)

ACCIDENT SUMMARY:

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-7	310°F	355°F (6)	45
PRESSURE (PSIG)	CT-4,5,7,8	12	57.2 (6)	45.2
R.H. (%)	CT-4,5,7,8,AB-9	100 Steam	100 Steam (6)	N/A
SPRAY	CT-7, 8	Demin. Water	- (6)	N/A
SUBMERGENCE	CT-4,5,7,8	N/A	N/A (6)	N/A
RADIATION (RADS)	AB-7	7.97×10^6 (24 Hrs.) (5)	3.2×10^8 (6)	3.1×10^8

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise / 2-2-84
CHECKED BY Eddie B. Thomas 12-16-84
APPROVED BY [illegible] 12/17/84

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN A HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-C03-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   Per the GE Functional Performance Requirements (FPR) document which is done by the system's engineer for each (tag no.) device. The FPR is included in the final qualification report.

5. Gamma TID only. The TE is sheathed in 304 stainless steel, therefore, beta radiation will have no effect.

6. Documentation has been received and reviewed, outlining a test program in accordance with GE LTR NEDE 24326-1-P (January, 1983). The test program is scheduled for completion by July 27, 1984.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C03-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C03-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI DEMO	SUMMARY
1E31 N 0001A	LEAK DETECTION SYSTEM RHR EQUIPMENT AREA 2 AMBIENT 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-4 HARSH AXC/07-568	C	A1	F	YES	.005	0002 SEC	T	SP301-C03-00
1E31 N 0001B	LEAK DETECTION SYSTEM RHR EQUIPMENT AREA 2 AMBIENT 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-4 HARSH AXC/07-568	C	A1	F	YES	.005	0002 SEC	T	SP301-C03-00
1E31 N 0002A	LEAK DETECTION SYSTEM RHR EQUIPMENT AREA 2 VENT INLET 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-4 HARSH AXC/07-568	C	A1	F	YES	.005	0002 SEC	T	SP301-C03-00
1E31 N 0002B	LEAK DETECTION SYSTEM RHR EQUIPMENT AREA 2 VENT INLET 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-4 HARSH AXC/07-568	C	A1	F	YES	.005	0002 SEC	T	SP301-C03-00
1E31 N 0003A	LEAK DETECTION SYSTEM RHR EQUIPMENT AREA 2 VENT OUTLET 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-4 HARSH AXC/07-568	C	A1	F	YES	.005	0002 SEC	T	SP301-C03-00
1E31 N 0003B	LEAK DETECTION SYSTEM RHR EQUIPMENT AREA 2 VENT OUTLET 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-4 HARSH AXC/07-568	C	A1	F	YES	.005	0002 SEC	T	SP301-C03-00
1E31 N 0004A	LEAK DETECTION SYSTEM RCIC EQUIP AREA AMBIENT 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-3 HARSH AXB/06-568	C	A1	F	YES	.005	0002 SEC	T	SP301-C03-00
1E31 N 0004B	LEAK DETECTION SYSTEM RCIC EQUIP AREA AMBIENT 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-3 HARSH AXB/06-574	C	A1	F	YES	.005	0002 SEC	T	SP301-C03-00
1E31 N 0005A	LEAK DETECTION SYSTEM EQUIP RCIC VENT INLET 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-3 HARSH AXB/06-574	C	A1	F	YES	.005	0002 SEC	T	SP301-C03-00
1E31 N 0005B	LEAK DETECTION SYSTEM EQUIP RCIC VENT INLET 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-3 HARSH AXB/06-574	C	A1	F	YES	.005	0002 SEC	T	SP301-C03-00
1E31 N 0006A	LEAK DETECTION SYSTEM EQUIP RCIC VENT OUTLET 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-3 HARSH AXB/06-568	C	A1	F	YES	.005	0002 SEC	T	SP301-C03-00

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C03-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C03-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO DEMO	QUALIFICATION M LF/MI	SUMMARY
1E31 N 0006B	LEAK DETECTION SYSTEM EQUIP RCIC VENT OUTLET 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-3 HARSH AXB/06-574	C	A1 F	YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0015A	LEAK DETECTION SYSTEM MSL 'A' GUARD PIPE 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	DW-1 HARSH C I/00-620	C	A3		.005 0002 SEC		T	SP301-C03-00
1E31 N 0015B	LEAK DETECTION SYSTEM MSL 'B' GUARD PIPE 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	DW-1 HARSH C I/00-620	C	A3		.005 0002 SEC		T	SP301-C03-00
1E31 N 0015C	LEAK DETECTION SYSTEM MSL 'C' GUARD PIPE 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	DW-1 HARSH C I/00-620	C	A3		.005 0002 SEC		T	SP301-C03-00
1E31 N 0015D	LEAK DETECTION SYSTEM MSL 'D' GUARD PIPE 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	DW-1 HARSH C I/00-620	C	A3		.005 0002 SEC		T	SP301-C03-00
1E31 N 0017A	LEAK DETECTION SYSTEM DRYWELL AMBIENT 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	DW-1 HARSH C I/01-599	C	A3		.005 0002 SEC		T	SP301-C03-00
1E31 N 0017B	LEAK DETECTION SYSTEM DRYWELL AMBIENT 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	DW-1 HARSH C I/01-599	C	A3		.005 0002 SEC		T	SP301-C03-00
1E31 N 0017C	LEAK DETECTION SYSTEM DRYWELL AMBIENT 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	DW-1 HARSH C I/01-642	C	A3		.005 0002 SEC		T	SP301-C03-00
1E31 N 0017D	LEAK DETECTION SYSTEM DRYWELL AMBIENT 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	DW-1 HARSH C I/01-642	C	A3		.005 0002 SEC		T	SP301-C03-00
1E31 N 0018A	LEAK DETECTION SYSTEM RHR EQUIPMENT AREA 1 AMBIENT 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-4 HARSH AXC/03-568	C	A1 F	YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0018B	LEAK DETECTION SYSTEM RHR EQUIPMENT AREA 1 AMBIENT 301 145C3224	PYCO 102-9039-11 TEMPERATURE ELEMENT	AB-4 HARSH AXC/03-568	C	A1 F	YES	.005 0002 SEC		T	SP301-C03-00

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C03-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C03-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES TME H2/H2	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1E31 N 0027A	LEAK DETECTION SYSTEM	PYCO	AB-4	C	A1	F	.005		T	SP301-C03-00
	RHR EQUIPMENT AREA 1 VENT INLET	102-9039-11	HARSH				0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXC/03-568			YES				
1E31 N 0027B	LEAK DETECTION SYSTEM	PYCO	AB-4	C	A1	F	.005		T	SP301-C03-00
	RHR EQUIPMENT AREA 1 VENT INLET	102-9039-11	HARSH				0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXC/03-568			YES				
1E31 N 0028A	LEAK DETECTION SYSTEM	PYCO	AB-4	C	A1	F	.005		T	SP301-C03-00
	RHR EQUIPMENT AREA 1 VENT OUTLET	102-9039-11	HARSH				0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXC/03-568			YES				
1E31 N 0028B	LEAK DETECTION SYSTEM	PYCO	AB-4	C	A1	F	.005		T	SP301-C03-00
	RHR EQUIPMENT AREA 1 VENT OUTLET	102-9039-11	HARSH				0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXC/03-568			YES				
1E31 N 0029A	LEAK DETECTION SYSTEM	PYCO	AB-7	C	A1	F	.005		T	SP301-C03-00
	PIPE TNL MAIN STEAM VENT INLET	102-9039-11	HARSH				0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXC/06-620			YES				
1E31 N 0029B	LEAK DETECTION SYSTEM	PYCO	AB-7	C	A1	F	.005		T	SP301-C03-00
	PIPE TNL MAIN STEAM VENT INLET	102-9039-11	HARSH				0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXC/06-620			YES				
1E31 N 0029C	LEAK DETECTION SYSTEM	PYCO	AB-7	C	A1	F	.005		T	SP301-C03-00
	PIPE TNL MAIN STEAM VENT INLET	102-9039-11	HARSH				0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXB/06-620			YES				
1E31 N 0029D	LEAK DETECTION SYSTEM	PYCO	AB-7	C	A1	F	.005		T	SP301-C03-00
	PIPE TNL MAIN STEAM VENT INLET	102-9039-11	HARSH				0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXB/06-620			YES				
1E31 N 0030A	LEAK DETECTION SYSTEM	PYCO	AB-7	C	A1	F	.005		T	SP301-C03-00
	PIPE TNL MAIN STEAM VENT OUTLET	102-9039-11	HARSH				0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXB/04-620			YES				
1E31 N 0030B	LEAK DETECTION SYSTEM	PYCO	AB-7	C	A1	F	.005		T	SP301-C03-00
	PIPE TNL MAIN STEAM VENT OUTLET	102-9039-11	HARSH				0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXB/04-620			YES				
1E31 N 0030C	LEAK DETECTION SYSTEM	PYCO	AB-7	C	A1	F	.005		T	SP301-C03-00
	PIPE TNL MAIN STEAM VENT OUTLET	102-9039-11	HARSH				0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXB/04-620			YES				

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C03-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C03-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	MANUFACTURER / MODEL / EQUIP. DESCRIPTION	ZONE / LOCATION	QUALD / CAT	EC / ELEV	FT	OPER DEMO / SEAL	ACC RES / H2/H2 DEMO	ACC/RT TME DEMO	QUALIFICATION M LF/MI	SUMMARY
1E31 N 0030D	LEAK DETECTION SYSTEM	PYCO	AB-7	C	A1	F		.005		T	SP301-C03-00
	PIPE TNL MAIN STEAM VENT OUTLET	102-9039-11	HARSH					0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXB/04-620				YES				
1E31 N 0031A	LEAK DETECTION SYSTEM	PYCO	AB-7	C	A1	F		.005		T	SP301-C03-00
	PIPE TNL MAIN STEAM AMBIENT	102-9039-11	HARSH					0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXB/05-620				YES				
1E31 N 0031B	LEAK DETECTION SYSTEM	PYCO	AB-7	C	A1	F		.005		T	SP301-C03-00
	PIPE TNL MAIN STEAM AMBIENT	102-9039-11	HARSH					0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXB/05-620				YES				
1E31 N 0031C	LEAK DETECTION SYSTEM	PYCO	AB-7	C	A1	F		.005		T	SP301-C03-00
	PIPE TNL MAIN STEAM AMBIENT	102-9039-11	HARSH					0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXB/04-620				YES				
1E31 N 0031D	LEAK DETECTION SYSTEM	PYCO	AB-7	C	A1	F		.005		T	SP301-C03-00
	PIPE TNL MAIN STEAM AMBIENT	102-9039-11	HARSH					0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		AXB/04-620				YES				
1E31 N 0034A	LEAK DETECTION SYSTEM	PYCO	CT-5	C	A1	F		.005		T	SP301-C03-00
	RWCU HEAT EXCHANGER AMBIENT	102-9039-11	HARSH					0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		C 0/00-652				YES	H2			
1E31 N 0034B	LEAK DETECTION SYSTEM	PYCO	CT-5	C	A1	F		.005		T	SP301-C03-00
	RWCU HEAT EXCHANGER AMBIENT	102-9039-11	HARSH					0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		C 0/00-652				YES	H2			
1E31 N 0035A	LEAK DETECTION SYSTEM	PYCO	CT-8	C	A1	F		.005		T	SP301-C03-00
	RWCU HEAT XGER VENT INLET	102-9039-11	HARSH					0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		C 0/01-652				YES	H2			
1E31 N 0035B	LEAK DETECTION SYSTEM	PYCO	CT-8	C	A1	F		.005		T	SP301-C03-00
	RWCU HEAT XGER VENT INLET	102-9039-11	HARSH					0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		C 0/01-652				YES	H2			
1E31 N 0036A	LEAK DETECTION SYSTEM	PYCO	CT-7	C	A1	F		.005		T	SP301-C03-00
	RWCU HEAT XGER VENT OUTLET	102-9039-11	HARSH					0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		C 0/17-664				YES	H2			
1E31 N 0036B	LEAK DETECTION SYSTEM	PYCO	CT-7	C	A1	F		.005		T	SP301-C03-00
	RWCU HEAT XGER VENT OUTLET	102-9039-11	HARSH					0002 SEC			
	301 145C3224 TEMPERATURE ELEMENT		C 0/17-664				YES	H2			

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C03-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C03-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT DEMO	OPER SEAL	ACC RES TME H2/H2	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1E31 N 0037A	LEAK DETECTION SYSTEM RWCU PMP ROOM #1 AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/04-599	C	A1	F	YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0037B	LEAK DETECTION SYSTEM RWCU PMP ROOM #1 AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/04-599	C	A1	F	YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0038A	LEAK DETECTION SYSTEM RWCU PMP ROOM #1 VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-9 HARSH AXB/05-599	C	A1	F	YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0038B	LEAK DETECTION SYSTEM RWCU PMP ROOM #1 VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-9 HARSH AXB/05-599	C	A1	F	YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0039A	LEAK DETECTION SYSTEM RWCU PMP ROOM #1 VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/05-599	C	A1	F	YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0039B	LEAK DETECTION SYSTEM RWCU PMP ROOM #1 VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/05-599	C	A1	F	YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0040A	LEAK DETECTION SYSTEM RWCU PMP ROOM #2 AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/05-599	C	A1	F	YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0040B	LEAK DETECTION SYSTEM RWCU PMP ROOM #2 AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/05-599	C	A1	F	YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0041A	LEAK DETECTION SYSTEM RWCU PMP ROOM #2 VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-9 HARSH AXB/05-599	C	A1	F	YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0041B	LEAK DETECTION SYSTEM RWCU PMP ROOM #2 VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-9 HARSH AXB/05-599	C	A1	F	YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0042A	LEAK DETECTION SYSTEM RWCU PMP ROOM #2 VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/05-599	C	A1	F	YES	.005 0002 SEC		T	SP301-C03-00

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C03-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C03-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD ELEV	EC CAT	FY	OPER DEMO SEAL	ACC RES TME H2/H2	ACC/RT DEMO DEMO	QUALIFICATION M LF/MI	SUMMARY
1E31 N 0042B	LEAK DETECTION SYSTEM RWCU PMP ROOM #2 VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/05-599		C	A1	F YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0043A	LEAK DETECTION SYSTEM RWCU VALVE NEST RM AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/05-599		C	A1	F YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0043B	LEAK DETECTION SYSTEM RWCU VALVE NEST RM AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/05-599		C	A1	F YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0044A	LEAK DETECTION SYSTEM RWCU VALVE NEST RM VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/05-599		C	A1	F YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0044B	LEAK DETECTION SYSTEM RWCU VALVE NEST RM VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/05-599		C	A1	F YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0045A	LEAK DETECTION SYSTEM RWCU VALVE NEST RM VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/05-599		C	A1	F YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0045B	LEAK DETECTION SYSTEM RWCU VALVE NEST RM VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	AB-5 HARSH AXC/05-599		C	A1	F YES	.005 0002 SEC		T	SP301-C03-00
1E31 N 0046A	LEAK DETECTION SYSTEM RWCU DEMIN ROOM #1 AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-664		C	A1	F YES H2	.005 0002 SEC		T	SP301-C03-00
1E31 N 0046B	LEAK DETECTION SYSTEM RWCU DEMIN ROOM #1 AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-664		C	A1	F YES H2	.005 0002 SEC		T	SP301-C03-00
1E31 N 0047A	LEAK DETECTION SYSTEM RWCU DEMIN RM #1 VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-8 HARSH C 0/02-664		C	A1	F YES H2	.005 0002 SEC		T	SP301-C03-00
1E31 N 0047B	LEAK DETECTION SYSTEM RWCU DEMIN RM #1 VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-8 HARSH C 0/02-664		C	A1	F YES H2	.005 0002 SEC		T	SP301-C03-00

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C03-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C03-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES TME DEMO H2/H2 DEMO	ACC/RT M LF/MI	QUALIFICATION SUMMARY
1E31 N 0048A	LEAK DETECTION SYSTEM RWCU DEMIN RM #1 VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-664	C	A1 F	YES	.005 0002 SEC H2	T	SP301-C03-00
1E31 N 0048B	LEAK DETECTION SYSTEM RWCU DEMIN RM #1 VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-664	C	A1 F	YES	.005 0002 SEC H2	T	SP301-C03-00
1E31 N 0049A	LEAK DETECTION SYSTEM RWCU DEMIN ROOM #2 AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-664	C	A1 F	YES	.005 0002 SEC H2	T	SP301-C03-00
1E31 N 0049B	LEAK DETECTION SYSTEM RWCU DEMIN ROOM #2 AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-664	C	A1 F	YES	.005 0002 SEC H2	T	SP301-C03-00
1E31 N 0050A	LEAK DETECTION SYSTEM RWCU DEMIN RM #2 VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-8 HARSH C 0/02-664	C	A1 F	YES	.005 0002 SEC H2	T	SP301-C03-00
1E31 N 0050B	LEAK DETECTION SYSTEM RWCU DEMIN RM #2 VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-8 HARSH C 0/02-664	C	A1 F	YES	.005 0002 SEC H2	T	SP301-C03-00
1E31 N 0051A	LEAK DETECTION SYSTEM RWCU DEMIN RM #2 VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-664	C	A1 F	YES	.005 0002 SEC H2	T	SP301-C03-00
1E31 N 0051B	LEAK DETECTION SYSTEM RWCU DEMIN RM #2 VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-664	C	A1 F	YES	.005 0002 SEC H2	T	SP301-C03-00
1E31 N 0052A	LEAK DETECTION SYSTEM RWCU DEMIN VALVE RM AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-652	C	A1 F	YES	.005 0002 SEC H2	T	SP301-C03-00
1E31 N 0052B	LEAK DETECTION SYSTEM RWCU DEMIN VALVE RM AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-652	C	A1 F	YES	.005 0002 SEC H2	T	SP301-C03-00
1E31 N 0053A	LEAK DETECTION SYSTEM RWCU DEMIN VLV RM VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-8 HARSH C 0/02-652	C	A1 F	YES	.005 0002 SEC H2	T	SP301-C03-00

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C03-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C03-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	MANUFACTURER / MODEL / EQUIP. DESCRIPTION	ZONE / LOCATION	QUALD / CAT	EC / ELEV	FT	OPER DEMO / SEAL	ACC RES / H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1E31 N 0053B	LEAK DETECTION SYSTEM RWCU DEMIN VLV RM VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-8 HARSH C 0/02-652	C	A1	F	YES	.005 0002 SEC H2			T	SP301-C03-00
1E31 N 0054A	LEAK DETECTION SYSTEM RWCU DEMIN VLV RM VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-652	C	A1	F	YES	.005 0002 SEC H2			T	SP301-C03-00
1E31 N 0054B	LEAK DETECTION SYSTEM RWCU DEMIN VLV RM VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-652	C	A1	F	YES	.005 0002 SEC H2			T	SP301-C03-00
1E31 N 0055A	LEAK DETECTION SYSTEM RWCU DEMIN REC TK AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-642	C	A1	F	YES	.005 0002 SEC H2			T	SP301-C03-00
1E31 N 0055B	LEAK DETECTION SYSTEM RWCU DEMIN REC TK AMBIENT 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-642	C	A1	F	YES	.005 0002 SEC H2			T	SP301-C03-00
1E31 N 0056A	LEAK DETECTION SYSTEM RWCU DEMIN REC TK VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-4 HARSH C 0/02-642	C	A1	F	YES	.005 0002 SEC H2			T	SP301-C03-00
1E31 N 0056B	LEAK DETECTION SYSTEM RWCU DEMIN REC TK VENT INLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-4 HARSH C 0/02-642	C	A1	F	YES	.005 0002 SEC H2			T	SP301-C03-00
1E31 N 0057A	LEAK DETECTION SYSTEM RWCU DEMIN REC TK VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-642	C	A1	F	YES	.005 0002 SEC H2			T	SP301-C03-00
1E31 N 0057B	LEAK DETECTION SYSTEM RWCU DEMIN REC TK VENT OUTLET 301 145C3224 TEMPERATURE ELEMENT	PYCO 102-9039-11	CT-5 HARSH C 0/04-642	C	A1	F	YES	.005 0002 SEC H2			T	SP301-C03-00

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-C07-00
MANUFACTURER'S QUALIFICATION REPORT NO. (6) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Flow Meter (Element)
MANUFACTURER/MODEL NO. S&K/20-9651-8550
TESTED DEVICE MODEL NO. Same

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-4	113°F	8,372 Hours
AVERAGE	AB-4	101°F	336,992 Hours
MINIMUM	AB-4	86°F	3,489 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Plant Shutdown	AB-4	147/113°F	111 @ 13½ Hours
Loss of HVAC (Non-Safety)	AB-4	134/113°F	1 @ 49 Hours
RADIATION DOSE (RADS, TID)	AB-4	3×10^5 Rads	40 Years

ACCELERATED AGING TEMP./TIMES 85°C/90 Days (6)
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/17 Years (6)
LIFE-LIMITING COMPONENT Neoprene Cable Connector (6)
TEST RADIATION DOSE (TID) Normal: 5.1×10^5 Rads (6)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	(See Note 6)
FUNCTION TIME (FT)	I (100 Days)	(See Note 6)
ACCURACY (ACC) (4)	2%	(See Note 6)
RESPONSE TIME (RT)	1 Second	(See Note 6)

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-4	160°F	265°F (6)	105
PRESSURE (PSIG)	AB-4	0.6	0 (6)	Later
R.H. (%)	AB-4	100 (Steam)	100 (Steam (6)	N/A
SPRAY	AB-4	N/A	N/A (6)	N/A
SUBMERGENCE	AB-4	N/A	N/A (6)	N/A
RADIATION (RADS)	AB-4	2×10^6 (5)	4.1×10^7 (6)	Later

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/		/
/		/		/
/		/		/

REVIEWED BY L. E. Wise 12-2-84
CHECKED BY Eddie B. Thomas Jr. 12-16-84
APPROVED BY N. A. Mathany 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-C07-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   Per the GE Functional Peformance Requirements (FPR) document which is done by the system's engineer for each (tag no.) device. The FPR is included in the final qualification report.

5. A device-specific accident radiation calculation has reduced the value for Zone AB-4 (4.1×10^7 rads) to 2×10^6 rads for these devices.

6. Documentation has been received and reviewed, outlining a test program in accordance with GE LTR NEDE 24326-1-P (January, 1983). The pre-test evaluation indicates possible test failure due to radiation levels higher than those to which the device has previously been tested. Efforts are underway to resolve this problem and complete the testing program by March 1, 1985.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C07-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C07-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT ELEV	EC SEAL	FT	OPER DEMO	ACC RES H2/H2	TME	ACC/RT DEMO	M	QUALIFICATION LF/MI SUMMARY
1E32 N 0006A	MSIV LEAKAGE CONTROL SYSTEM MAIN STM TO LOW PRESS MANIFOLD 301 169C8338 FLOW ELEMENT	S&K 20-9651-8550	AB-4 HARSH AXC/03-620	C	A1	I		.020 0001 SEC			T	SP301-C07-00
1E32 N 0006E	MSIV LEAKAGE CONTROL SYSTEM MAIN STM TO LOW PRESS MANIFOLD 301 169C8338 FLOW ELEMENT	S&K 20-9651-8550	AB-4 HARSH AXC/03-620	C	A1	I		.020 0001 SEC			T	SP301-C07-00
1E32 N 0006J	MSIV LEAKAGE CONTROL SYSTEM MAIN STM TO LOW PRESS MANIFOLD 301 169C8338 FLOW ELEMENT	S&K 20-9651-8550	AB-4 HARSH AXC/03-620	C	A1	I		.020 0001 SEC			T	SP301-C07-00
1E32 N 0006N	MSIV LEAKAGE CONTROL SYSTEM MAIN STM TO LOW PRESS MANIFOLD 301 169C8338 FLOW ELEMENT	S&K 20-9651-8550	AB-4 HARSH AXC/03-620	C	A1	I		.020 0001 SEC			T	SP301-C07-00

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-C08-00
MANUFACTURER'S QUALIFICATION REPORT NO. (6) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Flow Transmitter
MANUFACTURER/MODEL NO. S&K/91X-16-4-20
TESTED DEVICE MODEL NO. Same

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-4	113°F	8,372 Hours
AVERAGE	AB-4	101°F	336,992 Hours
MINIMUM	AB-4	86°F	3,489 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Plant Shutdown	AB-4	147/113°F	111 @ 13½ Hours
Loss of HVAC (Non-Safety)	AB-4	134/113°F	1 @ 49 Hours
RADIATION DOSE (RADS, TID)	AB-4	3×10^5 Rads	40 Years

ACCELERATED AGING TEMP./TIMES 85°C/90 Days (6)
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/17 Years (6)
LIFE-LIMITING COMPONENT Neoprene Gasket (6)
TEST RADIATION DOSE (TID) Normal: 5.1×10^5 Rads (6)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	(See Note 6)
FUNCTION TIME (FT)	I (100 Days)	(See Note 6)
ACCURACY (ACC) (4)	2%	(See Note 6)
RESPONSE TIME (RT)	1 Second	(See Note 6)

ACCIDENT SUMMARY:

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-4	160°F	265°F (6)	105
PRESSURE (PSIG)	AB-4	0.6	0 (6)	Later
R.H. (%)	AB-4	100 (Steam)	100 (Steam) (6)	N/A
SPRAY	AB-4	N/A	N/A (6)	N/A
SUBMERGENCE	AB-4	N/A	N/A (6)	N/A
RADIATION (RADS)	AB-4	2×10^6 (5)	4.1×10^7 (6)	Later

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise / 2-2-84
CHECKED BY Eddie B. Thomas Jr. 12-16-84
APPROVED BY [illegible] 12/17/84

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN A HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-C08-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   Per the GE Functional Performance Requirements (FPR) document which is done by the system's engineer for each (tag no.) device. The FPR is included in the final qualification report.

5. A device-specific accident radiation calculation has reduced the value for Zone AB-4 (4.1×10^7 rads) to 2×10^6 rads for these devices.

6. Documentation has been received and reviewed, outlining a test program in accordance with GE LTR NEDE 24326-1-P (January, 1983). The pre-test evaluation indicates possible test failure due to radiation levels higher than those to which the device has previously been tested. Efforts are underway to resolve this problem and complete the testing program by March 1, 1985.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C08-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C08-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI	SUMMARY
1E32 N 0053A	MSIV LEAKAGE CONTROL SYSTEM MAIN STM TO LOW PRESS MANIFOLD 301 169C8339 FLOW TRANSMITTER	S&K 91X-16-4-20	AB-4 HARSH AXC/04-620	C	A1	I YES	.020 0001 SEC		T	SP301-C08-00
1E32 N 0053E	MSIV LEAKAGE CONTROL SYSTEM MAIN STM TO LOW PRESS MANIFOLD 301 169C8339 FLOW TRANSMITTER	S&K 91X-16-4-20	AB-4 HARSH AXC/04-620	C	A1	I YES	.020 0001 SEC		T	SP301-C08-00
1E32 N 0053J	MSIV LEAKAGE CONTROL SYSTEM MAIN STM TO LOW PRESS MANIFOLD 301 169C8339 FLOW TRANSMITTER	S&K 91X-16-4-20	AB-4 HARSH AXC/04-620	C	A1	I YES	.020 0001 SEC		T	SP301-C08-00
1E32 N 0053N	MSIV LEAKAGE CONTROL SYSTEM MAIN STM TO LOW PRESS MANIFOLD 301 169C8339 FLOW TRANSMITTER	S&K 91X-16-4-20	AB-4 HARSH AXC/04-620	C	A1	I YES	.020 0001 SEC		T	SP301-C08-00

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-C23-00
MANUFACTURER'S QUALIFICATION REPORT NO. (6) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Power Range Monitor (PRM) Connector
MANUFACTURER/MODEL NO. Amphenol/X901-199
TESTED DEVICE MODEL NO. Same

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	DW-3	127 °F	8,402 Hours
AVERAGE	DW-3	127 °F	338,197 Hours
MINIMUM	DW-3	127 °F	3,501 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-3	141/127 °F	600 @ ½ Hour
RADIATION DOSE (RADS, TID)	DW-3	2×10^6 Rads (2)	

ACCELERATED AGING TEMP./TIMES (See Note 6)
QUALIFIED LIFE/MAINTENANCE INTERVAL (See Note 6)
LIFE-LIMITING COMPONENT (See Note 6)
TEST RADIATION DOSE (TID) (See Note 6) (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A3	(See Note 6)
FUNCTION TIME (FT)	C (1 Hour)	(See Note 6)
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-3	330°F	(See Note 6)	(6)
PRESSURE (PSIG)	DW-3	15	(See Note 6)	(6)
R.H (%)	DW-3	100 (Steam)	(See Note 6)	N/A
SPRAY	DW-3	N/A	N/A	N/A
SUBMERGENCE	DW-3	Yes	(See Note 5)	N/A
RADIATION (RADS)	DW-3	$2.7 \times 10^8 \gamma$, $2.9 \times 10^8 \beta$	(See Note 6) (2)	(6)

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise / 2/2/84
CHECKED BY Eddie B. Thomas Jr. / 12-16-83
APPROVED BY [illegible] / 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-C23-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. The PRM's are not required for a depressurization event, therefore, submergence is not applicable.

6. Qualification documentation outlining a test program in accordance with GE LTR NEDE 24326-1-P (January, 1983) is scheduled to be submitted by March 2, 1984. Testing is scheduled for completion (final test report) by October 5, 1984.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C23-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C23-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1 1C51 N 0011	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C 90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G001	HARSH					.040	SEC		90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599									
1C51 N 0011	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C 90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G001	HARSH					.040	SEC		90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599									
7 1C51 N 0011	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C 90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G001	HARSH					.040	SEC		90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599									
6 1C51 N 0011	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C 90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G001	HARSH					.040	SEC		90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 4)	C I/00-599									
5 1C51 N 0011	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C 90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G001	HARSH					.040	SEC		90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 4)	C I/00-599									
4 1C51 N 0011	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C 90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G001	HARSH					.040	SEC		90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599									
3 1C51 N 0011	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C 90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G001	HARSH					.040	SEC		90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 4)	C I/00-599									
2 1C51 N 0011	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C 90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G001	HARSH					.040	SEC		90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 5)	C I/00-599									
1 1C51 N 0012	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C 90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G002	HARSH					.040	SEC		90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599									
1C51 N 0012	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C 90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G002	HARSH					.040	SEC		90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 4)	C I/00-599									
7 1C51 N 0012	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C 90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G002	HARSH					.040	SEC		90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 4)	C I/00-599									

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C23-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C23-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME	ACC/RT DEMO DEMO	QUALIFICATION M	LF/MI	SUMMARY
6 1C51 N 0012	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G002	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599										
5 1C51 N 0012	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G002	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 4)	C I/00-599										
4 1C51 N 0012	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G002	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 5)	C I/00-599										
3 1C51 N 0012	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G002	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599										
2 1C51 N 0012	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G002	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599										
1 1C51 N 0013	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G003	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 4)	C I/00-599										
1C51 N 0013	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G003	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599										
7 1C51 N 0013	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G003	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 4)	C I/00-599										
6 1C51 N 0013	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G003	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 5)	C I/00-599										
5 1C51 N 0013	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G003	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599										
4 1C51 N 0013	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G003	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599										

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-C23-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-C23-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD CAT ELEV	EC	FT	OPER DEMO SEAL	ACC RES H2/H2	TME	ACC/RT DEMO DEMO	M	QUALIFICATION LF/MI	SUMMARY
3 1C51 N 0013	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G003	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599										
2 1C51 N 0013	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G003	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 4)	C I/00-599										
1 1C51 N 0014	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G004	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 4)	C I/00-599										
1C51 N 0014	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G004	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 5)	C I/00-599										
7 1C51 N 0014	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G004	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599										
6 1C51 N 0014	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G004	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599										
5 1C51 N 0014	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G004	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599										
4 1C51 N 0014	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G004	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 4)	C I/00-599										
3 1C51 N 0014	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G004	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 4)	C I/00-599										
2 1C51 N 0014	PWR RANGE NEUTRON MONITORING SYSTEM	GE	DW-3	A	A3	C	YES	.010		YES	C	90M	SP301-C23-00
	POWER RANGE DETECTOR	133D9868G004	HARSH					.040	SEC			90M	
	301 133D9868 LPRM DETECTOR	(TYPICAL FOR 6)	C I/00-599										

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-A01-00
MANUFACTURER'S QUALIFICATION REPORT NO. (7) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Level/Pressure Transmitter
MANUFACTURER/MODEL NO. Rosemount 1153GB
TESTED DEVICE MODEL NO. Same

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-3, 4	104°F	7,731 Hours
AVERAGE	CT-3, 4	87°F	322,115 Hours
MINIMUM	CT-3, 4	62°F	3,221 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Hot Standby	CT-3, 4	105/104°F	220 @ 120 Hours
Loss of HVAC (Non-Safety)	CT-3, 4	131/104°F	1 @ 49 Hours
SRV Discharge	CT-3, 4	120°F Max	108 @ 17 Hours
RADIATION DOSE (RADS, TID)	CT-3, 4	2.71×10^5 (2)	40 Years

ACCELERATED AGING TEMP./TIMES (See Note 7)
QUALIFIED LIFE/MAINTENANCE INTERVAL (See Note 7)
LIFE-LIMITING COMPONENT (See Note 7)
TEST RADIATION DOSE (TID) (See Note 7) (2)

OPERABILITY SUMMARY.

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	(See Note 7)
FUNCTION TIME (FT)	J (180 Days)	(See Note 7)
ACCURACY (ACC) (4)	Later	(See Note 7)
RESPONSE TIME (RT)	Later	(See Note 7)

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-3, 4	184.6°F	(See Note 7)	(7)
PRESSURE (PSIG)	CT-3, 4	12	(See Note 7)	(7)
R.H. (%)	CT-3, 4	100 (Steam)	(See Note 7)	N/A
SPRAY	CT-3, 4	(See Note 5)	(See Note 7)	N/A
SUBMERGENCE	CT-3, 4	N/A	(See Note 7)	N/A
RADIATION (RADS)	CT-3, 4	1.8×10^6 (6)	(See Note 7) (2)	(7)

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise / 2-2-84
CHECKED BY Eddie B. Thomas 12-16-84
APPROVED BY [illegible] 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-A01-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   To be documented in the final qualification report based on ATWS functional requirements.

5. Zone CT-3 is subject to pool swell spray and froth to elevation 623'4" (2'10" above the platform). Both zones CT-3 & 4 are subject to run-off and dripping from areas above that are subject to containment spray.

6. The accident radiation shown is for the ATWS event only and is based on 10% of the LOCA dose of 1.8×10^7 rads gamma.

7. A program to qualify Rosemount 1153B transmitters in accordance with GE LTR NEDE 24326-1-P (January, 1983) is being developed in a joint effort by CEI, GE and Rosemount. The testing will envelope all Perry (BWR-6) applications and will be scheduled for completion to be consistent with the Perry fuel load date.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-A01-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-A01-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1B21 N 0402A	REDUNDANT REACTIVITY CONTROL SYSTEM	ROSEMOUNT	CT-3	C	A1	J				T	SP301-A01-00
	REACTOR LOW WATER LEVEL 2 TRIP	1153GB	HARSH								
	301 188C7360 LEVEL TRANSMITTER		C 0/01-620			YES	H2				
1B21 N 0402B	REDUNDANT REACTIVITY CONTROL SYSTEM	ROSEMOUNT	CT-3	C	A1	J				T	SP301-A01-00
	REACTOR LOW WATER LEVEL 2 TRIP	1153GB	HARSH								
	301 188C7360 LEVEL TRANSMITTER		C 0/11-620			YES	H2				
1B21 N 0402E	REDUNDANT REACTIVITY CONTROL SYSTEM	ROSEMOUNT	CT-3	C	A1	J				T	SP301-A01-00
	REACTOR LOW WATER LEVEL 2 TRIP	1153GB	HARSH								
	301 188C7360 LEVEL TRANSMITTER		C 0/01-620			YES	H2				
1B21 N 0402F	REDUNDANT REACTIVITY CONTROL SYSTEM	ROSEMOUNT	CT-3	C	A1	J				T	SP301-A01-00
	REACTOR LOW WATER LEVEL 2 TRIP	1153GB	HARSH								
	301 188C7360 LEVEL TRANSMITTER		C 0/11-620			YES	H2				
1B21 N 0403A	REDUNDANT REACTIVITY CONTROL SYSTEM	ROSEMOUNT	CT-3	C	A1	J				T	SP301-A01-00
	REACTOR HIGH DOME PRESSURE	1153GB	HARSH								
	301 188C7360 PRESSURE TRANSMITTER		C 0/01-620			YES	H2				
1B21 N 0403B	REDUNDANT REACTIVITY CONTROL SYSTEM	ROSEMOUNT	CT-3	C	A1	J				T	SP301-A01-00
	REACTOR HIGH DOME PRESSURE	1153GB	HARSH								
	301 188C7360 PRESSURE TRANSMITTER		C 0/11-620			YES	H2				
1B21 N 0403E	REDUNDANT REACTIVITY CONTROL SYSTEM	ROSEMOUNT	CT-3	C	A1	J				T	SP301-A01-00
	REACTOR HIGH DOME PRESSURE	1153GB	HARSH								
	301 188C7360 PRESSURE TRANSMITTER		C 0/01-620			YES	H2				
1B21 N 0403F	REDUNDANT REACTIVITY CONTROL SYSTEM	ROSEMOUNT	CT-3	C	A1	J				T	SP301-A01-00
	REACTOR HIGH DOME PRESSURE	1153GB	HARSH								
	301 188C7360 PRESSURE TRANSMITTER		C 0/11-620			YES	H2				
1C41 N 0004A	STANDBY LIQUID CONTROL SYSTEM	ROSEMOUNT	CT-4	C	A1	J				T	SP301-A01-00
	PUMP DISCH PRESSURE	1153GB	HARSH								
	301 188C7360 PRESSURE TRANSMITTER		C 0/15-642			YES	H2				
1C41 N 0004B	STANDBY LIQUID CONTROL SYSTEM	ROSEMOUNT	CT-4	C	A1	J				T	SP301-A01-00
	PUMP DISCH PRESSURE	1153GB	HARSH								
	301 188C7360 PRESSURE TRANSMITTER		C 0/15-642			YES	H2				

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-A02-00
MANUFACTURER'S QUALIFICATION REPORT NO. (7) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Pressure Switch
MANUFACTURER/MODEL NO. Pressure Controls, Inc./A17-1P
TESTED DEVICE MODEL NO. Same

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-3	104°F	7,731 Hours
AVERAGE	CT-3	87°F	322,115 Hours
MINIMUM	CT-3	62°F	3,221 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Hot Standby	CT-3	105/104°F	200 @ 120 Hours
Loss of HVAC (Non-Safety)	CT-3	131/104°F	1 @ 49 Hours
SRV Discharge	CT-3	120°F Max	108 @ 17 Hours
RADIATION DOSE (RADS, TID)	CT-3	2.71×10^5 (2)	40 Years

ACCELERATED AGING TEMP./TIMES (See Note 7)
QUALIFIED LIFE/MAINTENANCE INTERVAL (See Note 7)
LIFE-LIMITING COMPONENT (See Note 7)
TEST RADIATION DOSE (TID) (See Note 7) (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	(See Note 7)
FUNCTION TIME (FT)	J (180 Days)	(See Note 7)
ACCURACY (ACC) (4)	Later	(See Note 7)
RESPONSE TIME (RT)	Later	(See Note 7)

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-3	184.6°F	(See Note 7)	(7)
PRESSURE (PSIG)	CT-3	12	(See Note 7)	(7)
R.H. (%)	CT-3	100 (Steam)	(See Note 7)	N/A
SPRAY	CT-3	(5)	(See Note 7)	N/A
SUBMERGENCE	CT-3	N/A	(See Note 7)	N/A
RADIATION (RADS)	CT-3	1.8×10^6 (6)	(See Note 7) (2)	(7)

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise 12-2-84
CHECKED BY Eddie B. Thomas Jr. 12-16-84
APPROVED BY R. A. Mathews 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-A02-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   To be documented in the final qualification report based on SRV monitor system function.

5. Zone CT-3 is subject to pool swell spray and froth up to elevation 623'4" (2'10" above the platform). Zone CT-3 is also subject to run-off and dripping from areas above that are subject to containment spray.

6. The accident radiation shown is for the ATWS event only and is based on 10% of the LOCA dose of 1.8×10^7 rads gamma.

7. The Pressure Controls, Inc. pressure switch has been qualified by GE based on vendor's test results. The documentation is available for audit in the Design Record File (DRF) at GE in San Jose, CA. CEI is procuring this documentation in Perry-specific form (in the format of GE LTR NEDE 24326-1-P, January 1983). It will be provided on a schedule to be determined in the near future.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-A02-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-A02-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO DEMO	QUALIFICATION M LF/MI	SUMMARY
1B21 N 0410A	AUTOMATIC DEPRESSURIZATION SYSTEM	PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F041A	A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH		C 0/01-620				YES	H2			
1B21 N 0410B	AUTOMATIC DEPRESSURIZATION SYSTEM	PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F041B	A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH		C 0/12-620				YES	H2			
1B21 N 0410C	AUTOMATIC DEPRESSURIZATION SYSTEM	PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F041C	A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH		C 0/01-620				YES	H2			
1B21 N 0410D	AUTOMATIC DEPRESSURIZATION SYSTEM	PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F041D	A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH		C 0/16-620				YES	H2			
1B21 N 0410E	AUTOMATIC DEPRESSURIZATION SYSTEM	PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F041E	A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH		C 0/01-620				YES	H2			
1B21 N 0410F	AUTOMATIC DEPRESSURIZATION SYSTEM	PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F041F	A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH		C 0/12-620				YES	H2			
1B21 N 0410G	AUTOMATIC DEPRESSURIZATION SYSTEM	PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F041G	A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH		C 0/01-620				YES	H2			
1B21 N 0410H	AUTOMATIC DEPRESSURIZATION SYSTEM	PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F041K	A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH		C 0/16-620				YES	H2			
1B21 N 0410J	AUTOMATIC DEPRESSURIZATION SYSTEM	PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F047B	A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH		C 0/12-620				YES	H2			
1B21 N 0410K	AUTOMATIC DEPRESSURIZATION SYSTEM	PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F047C	A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH		C 0/01-620				YES	H2			
1B21 N 0410L	AUTOMATIC DEPRESSURIZATION SYSTEM	PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F047D	A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH		C 0/16-620				YES	H2			

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-A02-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-A02-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI	SUMMARY
1B21 N 041OM	AUTOMATIC DEPRESSURIZATION SYSTEM		PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F047F		A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH			C 0/16-620				YES	H2			
1B21 N 041ON	AUTOMATIC DEPRESSURIZATION SYSTEM		PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F047G		A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH			C 0/01-620				YES	H2			
1B21 N 041OP	AUTOMATIC DEPRESSURIZATION SYSTEM		PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F047H		A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH			C 0/16-620				YES	H2			
1B21 N 041OR	AUTOMATIC DEPRESSURIZATION SYSTEM		PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F051A		A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH			C 0/01-620				YES	H2			
1B21 N 041OS	AUTOMATIC DEPRESSURIZATION SYSTEM		PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F051B		A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH			C 0/12-620				YES	H2			
1B21 N 041OT	AUTOMATIC DEPRESSURIZATION SYSTEM		PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F051C		A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH			C 0/01-620				YES	H2			
1B21 N 041OU	AUTOMATIC DEPRESSURIZATION SYSTEM		PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F051D		A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH			C 0/16-620				YES	H2			
1B21 N 041OV	AUTOMATIC DEPRESSURIZATION SYSTEM		PRESSURE CONTROL INC	CT-3	B	A1	J		N/A		T	SP301-A02-00
	SRV POSITION MONITOR- 1B21-F051G		A17-1P	HARSH						N/A		
	301 219B4562P1 PRESSURE SWITCH			C 0/01-620				YES	H2			

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-A03-00
MANUFACTURER'S QUALIFICATION REPORT NO. (7) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Solenoid Valve (with Limit Switches for "-46" only)
MANUFACTURER/MODEL NO. Valcor/V70900-43, 45, 46
TESTED DEVICE MODEL NO. Similar

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-3	104°F	7,731 Hours
AVERAGE	CT-3	87°F	322,115 Hours
MINIMUM	CT-3	62°F	3,221 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Hot Standby	CT-3	105/104°F	220 @ 120 Hours
Loss of HVAC (Non-Safety)	CT-3	131/104°F	1 @ 49 Hours
SRV Discharge	CT-3	120°F Max	108 @ 17 Hours
RADIATION DOSE (RADS, TID)	CT-3	2.71×10^5 (2)	40 Years

ACCELERATED AGING TEMP./TIMES (See Note 7)
QUALIFIED LIFE/MAINTENANCE INTERVAL (See Note 7)
LIFE-LIMITING COMPONENT (See Note 7)
TEST RADIATION DOSE (TID) (See Note 7) (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	(See Note 7)
FUNCTION TIME (FT)	E (12 Hours)	(See Note 7)
ACCURACY (ACC) (4)	N/A	(See Note 7)
RESPONSE TIME (RT)	1 Second	(See Note 7)

ACCIDENT SUMMARY:

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-3	184.6°F	(See Note 7)	(7)
PRESSURE (PSIG)	CT-3	12	(See Note 7)	(7)
R.H. (%)	CT-3	100 (Steam)	(See Note 7)	N/A
SPRAY	CT-3	(5)	(See Note 7)	N/A
SUBMERGENCE	CT-3	N/A	(See Note 7)	N/A
RADIATION (RADS)	CT-3	4.6×10^5 (6)	(See Note 7) (2)	(7)

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/		/
/		/		/
/		/		/

REVIEWED BY L. E. Wise 12-2-84
CHECKED BY Eddie B. Thomas Jr. 12-16-84
APPROVED BY R. A. Anthony 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-A03-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   To be documented in the final qualification report based on ATWS functional requirements.

5. Zone CT-3 is subject to pool swell spray and froth up to elevation 623'4" (2'10" above the platform). Zone CT-3 is also subject to run-off and dripping from areas above that are subject to containment spray.

6. The accident radiation shown is for the ATWS event only and is based on 10% of the LOCA dose of 4.6×10^6 rads gamma for the 12-hour function time.

7. The Valcor solenoid valves (with limit switches) supplied under the ATWS program were qualified by GE in accordance with GE LTR NEDE 24326-1-P (January, 1983) using the vendor's qualification testing report. The documentation is available for audit in the Design Record File (DRF) at GE in San Jose, CA. CEI is procuring this documentation in Perry-specific form to be provided on a schedule to be determined in the future.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-A03-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-A03-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES TME H2/H2 DEMO	ACC/RT DEMO M LF/MI	QUALIFICATION SUMMARY
1 1C11 F 0009	CONTROL ROD DRIVE HYDRAULIC SYSTEM SCRAM DISCH VOL VENT/DRAIN PILOT VLV 301 21A9317AV DUAL COIL SOLENOID VALVE - COIL B	VALCOR V70900-45	CT-3 HARSH C 0/08-620	B	A1	E YES	N/A 0001 SEC H2	T	SP301-A03-00
1C11 F 0009	CONTROL ROD DRIVE HYDRAULIC SYSTEM SCRAM DISCH VOL VENT/DRAIN PILOT VLV 301 21A9317AV DUAL COIL SOLENOID VALVE - COIL A	VALCOR V70900-45	CT-3 HARSH C 0/08-620	B	A1	E YES	N/A 0001 SEC H2	T	SP301-A03-00
1C11 F 0182	CONTROL ROD DRIVE HYDRAULIC SYSTEM SCRAM DISCH VOL VENT/DRAIN PILOT VLV 301 21A9317AV DUAL COIL SOLENOID VALVE - COIL A	VALCOR V70900-45	CT-3 HARSH C 0/09-620	B	A1	E YES	N/A 0001 SEC H2	T	SP301-A03-00
1 1C11 F 0182	CONTROL ROD DRIVE HYDRAULIC SYSTEM SCRAM DISCH VOL VENT/DRAIN PILOT VLV 301 21A9317AV DUAL COIL SOLENOID VALVE - COIL B	VALCOR V70900-45	CT-3 HARSH C 0/09-620	B	A1	E YES	N/A 0001 SEC H2	T	SP301-A03-00

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-A06-00
MANUFACTURER'S QUALIFICATION REPORT NO. (7) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Level Switch
MANUFACTURER/MODEL NO. Magnetrol/5.0-751-1X-MPG-M14HY
TESTED DEVICE MODEL NO. Same

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-3	123°F	8,408 Hours
AVERAGE	AB-3	102°F	338,440 Hours
MINIMUM	AB-3	66°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC (Non-Safety)	AB-3	143/123°F	1 @ 49 Hours
RADIATION DOSE (RADS, TID)	CT-3	2.71×10^5 (2)	40 Years

ACCELERATED AGING TEMP./TIMES (See Note 7)
QUALIFIED LIFE/MAINTENANCE INTERVAL (See Note 7)
LIFE-LIMITING COMPONENT (See Note 7)
TEST RADIATION DOSE (TID) (See Note 7) (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	(See Note 7)
FUNCTION TIME (FT)	J (180 Days)	(See Note 7)
ACCURACY (ACC) (4)	Later	(See Note 7)
RESPONSE TIME (RT)	Later	(See Note 7)

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-3	184.6°F	(See Note 7)	(7)
PRESSURE (PSIG)	CT-3	12	(See Note 7)	(7)
R.H. (%)	CT-3	100 (Steam)	(See Note 7)	N/A
SPRAY	CT-3	(5)	(See Note 7)	N/A
SUBMERGENCE	CT-3	N/A	(See Note 7)	N/A
RADIATION (RADS)	CT-3	1.8×10^6 (6)	(See Note 7) (2)	(7)

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY L. E. Wise 12-2-84
CHECKED BY Eddie B. Thomas Jr. 12-16-84
APPROVED BY M. A. Mathenj 13/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-A06-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   To be documented in the final qualification report based on ATWS functional requirements.

5. Zone CT-3 is subject to pool swell spray and froth to elevation 623'4" (2'10" above the platform). Zone CT-3 is also subject to run-off and dripping from areas above that are subject to containment spray.

6. The accident radiation shown is for the ATWS event only and is based on 10% of the LOCA dose of 1.8×10^7 rads gamma.

7. The Magnetrol limit switches supplied under the ATWS program were qualified by GE in accordance with GE LTR NEDE 24326-1-P (January, 1983) using the vendor's qualification testing report. The documentation is available for audit in the Design Record File (DRF) at GE in San Jose, CA. CEI is procuring this documentation in Perry-specific form to be provided on a schedule to be determined in the near future.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-A06-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-A06-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT ELEV	EC	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1C11 N 0013A	CONTROL ROD DRIVE HYDRAULIC CONTROL SCRAM DISCHARGE VOLUME LEVEL 301 184C4776 LEVEL SWITCH	MAGNETROL 5.0-751-1X-MPG-M14HY	CT-3 HARSH C 0/13-620	B	A1	J	YES	N/A H2		N/A	T	SP301-A06-00
1C11 N 0013B	CONTROL ROD DRIVE HYDRAULIC CONTROL SCRAM DISCHARGE VOLUME LEVEL 301 184C4776 LEVEL SWITCH	MAGNETROL 5.0-751-1X-MPG-M14HY	CT-3 HARSH C 0/13-620	B	A1	J	YES	N/A H2		N/A	T	SP301-A06-00
1C11 N 0013C	CONTROL ROD DRIVE HYDRAULIC CONTROL SCRAM DISCHARGE VOLUME LEVEL 301 184C4776 LEVEL SWITCH	MAGNETROL 5.0-751-1X-MPG-M14HY	CT-3 HARSH C 0/05-620	B	A1	J	YES	N/A H2		N/A	T	SP301-A06-00
1C11 N 0013D	CONTROL ROD DRIVE HYDRAULIC CONTROL SCRAM DISCHARGE VOLUME LEVEL 301 184C4776 LEVEL SWITCH	MAGNETROL 5.0-751-1X-MPG-M14HY	CT-3 HARSH C 0/05-620	B	A1	J	YES	N/A H2		N/A	T	SP301-A06-00
1E51 N 0010	REACTOR CORE ISOLATION COOLING STM SUPPLY LINE DRAIN POT LEVEL 301 184C4776 LEVEL SWITCH	MAGNETROL 5.0-751-1X-MPG-M14HY	AB-3 HARSH AXC/05-574	B	A1	E	YES	.057	0001 SEC		T	SP301-A06-00
1E51 N 0037	REACTOR CORE ISOLATION COOLING STM EXHAUST LINE DRAIN POT LEVEL 301 184C4776 LEVEL SWITCH	MAGNETROL 5.0-751-1X-MPG-M14HY	AB-3 HARSH AXB/05-574	B	A1	E	YES	.057	0001 SEC		T	SP301-A06-00

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-301-A07-00
MANUFACTURER'S QUALIFICATION REPORT NO. (7) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Level Transmitter
MANUFACTURER/MODEL NO. Gould/PD3218
TESTED DEVICE MODEL NO. Same

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-4	104°F	7,731 Hours
AVERAGE	CT-4	87°F	322,115 Hours
MINIMUM	CT-4	62°F	3,221 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Hot Standby	CT-4	105/104°F	220 @ 120 Hours
Loss of HVAC (Non-Safety)	CT-4	131/104°F	1 @ 49 Hours
SRV Discharge	CT-4	120°F Max.	108 @ 17 Hours
RADIATION DOSE (RADS, TID)	CT-4	2.71 x10^{5}Rads(2)	40 Years

ACCELERATED AGING TEMP./TIMES (See Note 7)
QUALIFIED LIFE/MAINTENANCE INTERVAL (See Note 7)
LIFE-LIMITING COMPONENT (See Note 7)
TEST RADIATION DOSE (TID) (See Note 7) (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	(See Note 7)
FUNCTION TIME (FT)	J (180 Days)	(See Note 7)
ACCURACY (ACC) (4)	Later	(See Note 7)
RESPONSE TIME (RT)	Later	(See Note 7)

ACCIDENT SUMMARY:

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-4	184.6°F	(See Note 7)	(See Note 7)
PRESSURE (PSIG)	CT-4	12	(See Note 7)	(See Note 7)
R.H. (%)	CT-4	100 (Steam)	(See Note 7)	N/A
SPRAY	CT-4	(See Note 5)	(See Note 7)	N/A
SUBMERGENCE	CT-4	N/A	(See Note 7)	N/A
RADIATION (RADS)	CT-4	1.8 x 10^6 (Note 6)	(See Note 7) (2)	(See Note 7)

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY Claude Gosch / 2-2-84
CHECKED BY Eddie B. Thomas Jr. 12-15-84
APPROVED BY W. A. Mathews 12/17/84

QUALIFICATION SUMMARY (FILE NO.) SP-301-A07-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   To be documented in the final qualification report based on ATWS functional requirements.

5. Zone CT-4 is subject to run-off and dripping from areas above that are subject to containment spray.

6. The accident radiation shown is for the ATWS event only and is based on 10% of the LOCA dose of 1.8×10^7 rads gamma.

7. The Gould level transmitters supplied under the ATWS program were qualified by GE in accordance with GE LTR NEDE 24326-1-P (January, 1983) using the vendor's qualification testing report. The documentation is available for audit in the Design Record File (DRF) at GE in San Jose, CA. CEI is procuring this documentation in Perry-specific form to be provided on a schedule to be determined in the near future.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP301-A07-00 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP301-A07-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1C41 N 0001	STANDBY LIQUID CONTROL SYSTEM		GOULD	CT-4	B	A3	I	YES	N/A		YES	T 40Y	SP301-A07-00
	STORAGE TANK LEVEL		PD3218	HARSH					N/A			15Y	
	301 184C4775	LEVEL TRANSMITTER		C 0/13-642									
1C41 N 0010A	REDUNDANT REACTIVITY CONTROL SYSTEM		GOULD	CT-4	B	A1	J					T	SP301-A07-00
	SLCS TANK LEVEL		PD3018	HARSH									
	301 184C4775	LEVEL TRANSMITTER		C 0/14-642				YES	H2				
1C41 N 0010B	REDUNDANT REACTIVITY CONTROL SYSTEM		GOULD	CT-4	B	A1	J					T	SP301-A07-00
	SLCS TANK LEVEL		PD3018	HARSH									
	301 184C4775	LEVEL TRANSMITTER		C 0/14-642				YES	H2				
1C41 N 0010C	REDUNDANT REACTIVITY CONTROL SYSTEM		GOULD	CT-4	B	A1	J					T	SP301-A07-00
	SLCS TANK LEVEL		PD3018	HARSH									
	301 184C4775	LEVEL TRANSMITTER		C 0/14-642				YES	H2				
1C41 N 0010D	REDUNDANT REACTIVITY CONTROL SYSTEM		GOULD	CT-4	B	A1	J					T	SP301-A07-00
	SLCS TANK LEVEL		PD3018	HARSH									
	301 184C4775	LEVEL TRANSMITTER		C 0/14-642				YES	H2				

CLEVELAND ELECTRIC ILLUMINATING CO.
PERRY NUCLEAR POWER PLANT
ENVIRONMENTAL QUALIFICATION OF CLASS IE EQUIPMENT
IN A HARSH ENVIRONMENT SCEW STATUS & SCHEDULE
(BALANCE OF PLANT SPECIFICATIONS)

SPEC NUMBER OR SUMMARY	EQUIPMENT DESCRIPTION	EQRL STATUS
SP-33-00-01	Raychem N-MCK Connection Kit	A
SP-33-00-08	Raychem WCSF-N Splice Assembly	A
SP-33-00-09	Raychem NCBK/NESK Cable Breakout	A
SP-33-00-12	Raychem NMCK8	A
SP-33-00-13	Raychem NPKV Stub Connection Kit	A
SP-33-00-14	Raychem NHVT	A
SP-33-00-15	Raychem NHVT	A
SP-33-00-16	Raychem NHVT	A
SP-33-00-21	Buchanan NQB/NQO Terminal Blocks	A
SP-33-00-22	Burndy YAES-K Connectors	A
SP-91-00-02	Solon Differential Pressure Switch	A
SP-506-00-01	Siemens-Allis Motor	A
SP-524-00-	Bettis Actuator	D
SP-559-00-1/2	Anaconda Uniblend EP Power Cable	A
SP-560-00-1/2	Rockbestos Firewall III Cable/Chemically - XLPE	A
SP-560-00-3/4	Rockbestos Firewall III Cable/Irradiated - XLPE	A
SP-561-00-1/2/3	Brand-Rex - Instrument Cable	A
SP-563-00-2	Westinghouse Electrical Penetrations	A
SP-567-00-1	Samuel Moore Thermocouple Cable	A
SP-568-00-01	Limitorque Motor Operator	A

CLEVELAND ELECTRIC ILLIMINATING CO.
PERRY NUCLEAR POWER PLANT
ENVIRONMENTAL QUALIFICATION OF CLASS IE EQUIPMENT
IN A HARSH ENVIRONMENT SCEW STATUS & SCHEDULE
(BALANCE OF PLANT SPECIFICATIONS)

SPEC NUMBER OR SUMMARY	EQUIPMENT DESCRIPTION	EQRL STATUS
SP-594-00-02	Local Panels - GE Wire	A
SP-594-00-03	Local Panels - T&B Sta-Kon Terminals	A
SP-594-00-04	Local Panels - Buchanan Terminals/Fuse Blocks	A
SP-594-00-06	Local Panels - GE CR151B Terminal Boards	A
SP-594-00-07	Local Panels - GE CR2940 Switch	A
SP-594-00-09	Local Panels - GE ET-16 Indicating Lights	A
SP-594-00-12	Local Panels - Gould J10 Relays	A
SP-594-00-13	Local Panels - Agastat 7012 Relays	A
SP-596-00-01	Weed Model 611 RTD	A
SP-596-00-01	Weed Model 612 RTD	A
SP-596-00-01	Weed Model 4000R Temperature Transmitter	A
SP-596-00-01	Weed Thermocouple	A
SP-597-00-02	Target Rock Solenoid Valve/Position Switch	A
SP-598-00-	Barton Model 580A Differential Pressure Switch	B
SP-604-00-03	Rosemount 1153 Pressure Transmitter	A
SP-606-00-	Gould PD3218 Level Transmitter	C
SP-607-01-04	ASCO NP8320 Solenoid	A
SP-621-00-	Kaman Radiation Monitors	C
SP-622-00-	Kaman Gas Radiation Monitors	C
SP-627-00-	PSI Hydrogen Igniters	B
SP-628-00-01	Westinghouse H_2 Recombiner	A

CLEVELAND ELECTRIC ILLUMINATING CO.
PERRY NUCLEAR POWER PLANT
ENVIRONMENTAL QUALIFICATION OF CLASS IE EQUIPMENT
IN A HARSH ENVIRONMENT SCEW STATUS & SCHEDULE
(EALANCE OF PLANT SPECIFICATIONS)

SPEC NUMBER OR SUMMARY	EQUIPMENT DESCRIPTION	EQRL STATUS
SP-632-00-03	Reliance Motors	A
SP-641-00-04	ASCO NP8316 Solenoid	A
SP-642-	CVI Heaters & Controls	B
SP-645-00-07	Reliance Motors	A
SP-646-00-03	Reliance Motors	A
SP-793-01-02	Rockbestos Firewall III Coaxial Cable	A
SP-793-01-03	Rockbestos Firewall III Instrumentation Cable	A
SP-793-05-	NAMCO Limit Switches	C
SP-793-09-	Nelson Multi-Cable Transients (MCT's)	C
SP-793-11-	Distribution Panel	D
SP-793-12-01	Conax ECSA	A
SP-793-12-	Conax PL-Gland	C

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-1
MANUFACTURER'S QUALIFICATION REPORT NO. 58442-3 REV. 0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Splice Nuclear Motor Connection Kit
MANUFACTURER/MODEL NO. Raychem/N-MCK
TESTED DEVICE MODEL NO. N-MCK

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,410 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-4	133°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	141°F Max.	300 Hours
Shutdown	AB-2	140°F Max.	54,774 Hours
Loss of HVAC	AB-5	258°F Max.	49 Hours
RADIATION DOSE (RADS, TID) (6)	DW-2	4.5×10^7 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 150°C/1500 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.9×10^8 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & loaded, 1000 VAC 25 Amp.
FUNCTION TIME (FT)	(J) 180 Days	30-Day LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	390°F	60°F
PRESSURE (PSIG)	DW-1	22.1 PSIG	66 PSIG	43.9 PSIG
R.H. (%)	DW-1	Steam	Steam	N/A
SPRAY	DW-1	Demin. Water	Borated Water	N/A
SUBMERGENCE	DW-1	5 Seconds	5 Minutes	N/A
RADIATION (RADS) (7)	(5) DW-1	21.6×10^7 Rads	24.5×10^7 Rads (2)	2.9×10^7 Rads 13%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig / 2-2-84
CHECKED BY Eddie B. Thomas Jr. / 3-19-84
APPROVED BY H. A. Mathews / 3/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-1

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Beta radiation is not included due to reduction allowed for shielding provided by conduit and/or enclosures which justifies the Beta effects as being negotiable.

6. Neutron radiation is not included due to the gamma radiation equivalent being insignificant in comparison to the gamma TID.

7. Cable and splice locations in DW-1 were analyzed to provide location specific radiation values.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-8
MANUFACTURER'S QUALIFICATION REPORT NO. 58442-1 REV. 0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Splice - Nuclear In-Line Cable Splice Assembly
MANUFACTURER/MODEL NO. Raychem/WCSF-N
TESTED DEVICE MODEL NO. WCSF-N

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,410 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-4	133°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	141°F Max.	300 Hours
Shutdown	AB-2	140°F Max.	54,774 Hours
Loss of HVAC	AB-5	258°F Max.	49 Hours
RADIATION DOSE (RADS, TID) (7)	DW-2	4.5×10^7 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 2-Specimens 150°C/1500 Hours, 2-Specimens 150°C/1000 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.9×10^8 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & Loaded, 1000 VAC, 25 Amp.
FUNCTION TIME (FT)	(J) 180 Days	30-Day LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	390°F	60°F
PRESSURE (PSIG)	DW-1	22.1 PSIG	66 PSIG	43.9 PSIG
R.H. (%)	DW-1	Steam	Steam	N/A
SPRAY	DW-1	Demin. Water	Borated Water	N/A
SUBMERGENCE	DW-1	5 Seconds	5 Minutes	N/A
RADIATION (RADS)(5) (6)	DW-1	21.6×10^7 Rads	24.5×10^7 Rads (2)	2.9×10^7 Rads 13%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig / 2-2-84
CHECKED BY
APPROVED BY [illegible] 3/18/84

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-8

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Cable and splice locations in DW-1 were analyzed to provide location specific radiation values.

6. Beta radiation is not included due to reduction allowed for shielding provided by conduit and/or enclosures which justifies the Beta effects as being negotiable.

7. Neutron radiation is not included due to the gamma radiation equivalent being insignificant in comparison to the gamma TID.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-9
MANUFACTURER'S QUALIFICATION REPORT NO. 58442-2 REV. 0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Nuclear Cable Breakout and End Sealing Kit
MANUFACTURER/MODEL NO. Raychem/NCBK, NESK
TESTED DEVICE MODEL NO. NCBK/NESK

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,410 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-4	133°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	141°F Max.	300 Hours
Shutdown	AB-2	140°F Max.	54,774 Hours
Loss of HVAC	AB-5	258°F Max.	49 Hours
RADIATION DOSE (RADS, TID) (7)	DW-2	4.5×10^7 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 2-Specimens 150°C/1500 Hours, 2-Specimens 150°C/1000 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.9×10^8 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & Loaded, 1000 VAC, 20 Amp.
FUNCTION TIME (FT)	(J) 180 Days	30-Day LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	390°F	60°F
PRESSURE (PSIG)	DW-1	22.1 PSIG	66 PSIG	43.9 PSIG
R.H. (%)	DW-1	Steam	Steam	N/A
SPRAY	DW-1	Demin. Water	Borated Water	N/A
SUBMERGENCE	DW-1	5 Seconds	5 Minutes	N/A
RADIATION (RADS) (6)	DW-1	21.6×10^7 Rads	24.5×10^7 Rads (2)	2.9×10^7 Rads

(5) (FOR SUPPLEMENTAL NOTES SEE PAGE 2) 138

REV.NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig / 2-2-84
CHECKED BY [illegible] /
APPROVED BY [illegible] 12/16/84

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-9

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Cable and splice locations in DW-1 were analyzed to provide location specific radiation values.

6. Beta radiation is not included due to reduction allowed for shielding provided by conduit and/or enclosures which justifies the beta effects as being negotiable.

7. Neutron radiation is not included due to the gamma radiation equivalent being insignificant in comparison to the gamma TID.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-12
MANUFACTURER'S QUALIFICATION REPORT NO. EDR-5037 REV. 0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION 8kv In-Line Motor Connection Splice
MANUFACTURER/MODEL NO. Raychem/NMCK8
TESTED DEVICE MODEL NO. NMCK8

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1) (5)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-4	113	8372 Hrs
AVERAGE	AB-4	101	336992 Hrs
MINIMUM	AB-4	86	3489 Hrs
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-2	154/106	49 Hrs
Plant Shutdown	AB-2	140/106	111cyc.@235Hrs
Continuation of Shutdown	AB-2	140/106	40cyc.@ 720Hrs.
RADIATION DOSE (RADS, TID) (Gamma only)	AB-2	6.2×10^5 (2)	40 years

ACCELERATED AGING TEMP/TIMES 150°C/504 hrs.
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 yrs/none (6)
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 5×10^7 rads (2)

OPERABILITY SUMMARY

FUNCTIO	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Associated cable energized at 5kv
FUNCTION TIME (FT) (7)	(J) 180 days	4 hr. HELB exposure, balance extended by analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-4	16.0	414	254
PRESSURE (PSIG)	AB-4	0.6	28	27.4
R.H (%)	AB-4	100	100% and steam	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	AB-4	4.1×10^7	4.94×10^7 (2)	$.84 \times 10^7$ 20%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig GSK 3-6-84
CHECKED BY [illegible]
APPROVED BY [illegible] 1-18-84

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-12

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements: N/A

5. Class 1E use for the NMCK8 splice in a harsh environment is limited to areas outside of containment, specifically zones AB-2 and AB-4. The NMCK8 is qualified to all mild environment zones in the plant.

6. Analysis of the Arrhenius data presented in the report has allowed an extension of the qualified life to 40 years based on a 82°C cable rating using derating factors allowed for at PNPP.

7. The test specimens were subjected to the simulated HELB exposure as described in Figure 1 of attachment 4 of the test report for 4 hours. This profile provides a large margin over any accident condition which will occur in harsh environment zones AB-2 and AB-4 for the first 4 hours of an accident. The remaining time up to 180 days was not included in the test sxposure. However, the post accident temperatures are well within the design limits of the splice materials.(See Note 6) Therefore, the NMCK8 is qualified for the duration of the out-of-containment accident environments including steam.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-13
MANUFACTURER'S QUALIFICATION REPORT NO. 58722-1 REV. 0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Splice--Nuclear Plant Stub Connection Kit
MANUFACTURER/MODEL NO. Raychem/NPKV
TESTED DEVICE MODEL NO. NPKV

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,410 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-4	133°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	141°F Max.	300 Hours
Shutdown	AB-2	140°F Max.	54,774 Hours
Plant Shutdown	AB-4	147°F Max.	1,499 Hours
Loss of HVAC	AB-5	258°F Max.	49 Hours
RADIATION DOSE (RADS, TID) (8)	DW-2	4.5×10^7 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 2 Specimens 150°C/916 Hours, 2 Specimens 175°C/138 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.15×10^8 Rads (5) (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & Loaded, 1000 VAC, 30 Amp.
FUNCTION TIME (FT)	(J) 180 Days	31.3 Day LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	442°F	112°F
PRESSURE (PSIG)	DW-1	22.1 PSIG	132 PSIG	109.9 PSIG
R.H. (%)	DW-1	Steam	Steam	N/A
SPRAY	DW-1	Demin. Water	Borated Water	N/A
SUBMERGENCE	DW-1	5 Seconds	5 Minutes	N/A
RADIATION (RADS) (6) (7)	DW-1	21.6×10^7 Rads	24.5×10^7 Rads (2)	2.9×10^7 Rads 13%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig / 2-2-84
CHECKED BY [illegible] / 2-14-84
APPROVED BY [illegible] / 2/18/84

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-13

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Raychem Test Report 58442-3 included molded parts made of the same compound as the NPKV molded parts. These molded parts were irradiated to 2.9×10^8 Rads. This value was used for qualification.

6. Cable and splice locations in DW-1 were analyzed to provide location specific radiation values.

7. Beta radiation is not included due to reduction allowed for shielding provided by conduit and/or enclosures which justifies the Beta effects as being negotiable.

8. Neutron radiation is not included due to the gamma radiation equivalent being insignificant in comparison to the gamma TID.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-14,15,16
MANUFACTURER'S QUALIFICATION REPORT NO. 110, 71100, EDR-6001 REV. 1, 0, 0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Nuclear High Voltage Termination Kit
MANUFACTURER/MODEL NO. Raychem/NHVT
TESTED DEVICE MODEL NO. NHVT

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1) (5)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-4	113	8372 Hrs
AVERAGE	AB-4	101	336992 Hrs
MINIMUM	AB-4	86	3489 Hrs
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-2	154/106	49 Hrs
Plant Shutdown	AB-2	140/106	111cyc.@235Hrs.
Continuation of Shutdown	AB-2	140/106	40 cyc.@720Hrs.
RADIATION DOSE (RADS, TID) (Gamma only)	AB-2	6.2×10^5 (2)	40 years

ACCELERATED AGING TEMP./TIMES(6) 121°C/168 hrs.
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 yrs/none
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2×10^8 rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized at rated voltage (5kv & 15kv)
FUNCTION TIME (FT)	(J) 180 days	113 day plus 11 hour test extended to 180 dy. by anal.
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-4	160	360	200
PRESSURE (PSIG)	AB-4	0.6	70	69.4
R.H (%)	AB-4	100	100% & Steam	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	AB-4	4.1×10^7	19.94×10^7 (2)	15.84×10^8 > 10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig GSK 3/6/84
CHECKED BY
APPROVED BY 3/16/84

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-14, 15, 16

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements: N/A

5. Class 1E use of the NHVT splice in a harsh environment is limited to areas outside containment, specifically zones AB-2 and AB-4. The NHVT is qualified to all mild environmental zones in the plant.

6. 121°C/168 Hrs. aging period was evaluated and found to be representative of greater than 40 years for an average normal temperature of 40°C or less. Calculations were performed using Arrhenius methodology and the activation energy of the NHVT material.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-21
MANUFACTURER'S QUALIFICATION REPORT NO. F-C5143 REV. 0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION One Piece & Sectional Terminal Blocks
MANUFACTURER/MODEL NO. Buchanan/NQB, NQO
TESTED DEVICE MODEL NO. NQB, NQO

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,408 Hours
AVERAGE	FB-5	127°F	338,440 Hours
MINIMUM	DG-1	40 °F	3,489 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-5	258/128°F Max.	49 Hours
SRVD	CT-3	120/90 °F Max.	108 @ 17 Hours
Plant Shutdown	AB-2	140°F Max.	54,774 Hours
RADIATION DOSE (RADS, TID)	AB-7	3.0×10^6 (2)	40 Years

ACCELERATED AGING TEMP./TIMES NQB - 165°C/950 Hours, NQO - 121°C/199 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.0×10^8 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & Loaded 120 VAC, 25 Amp.
FUNCTION TIME (FT)	(J) 180 Days	7-Day LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-7	310°F	346°F	36°F
PRESSURE (PSIG)	CT-3	12 PSIG	113 PSIG	101 PSIG
R.H. (%)	CT-3	100%	100%	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS) (5)	AB-4	4.1×10^7 Rads	19.7×10^7 Rads (2)	15.6×10^7 Rads 380%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig / 2-2-84
CHECKED BY [illegible] /
APPROVED BY [illegible] 3/16/84

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-21

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Beta radiation is not included due to reduction allowed for shielding provided by conduit and/or enclosures which justifies the beta effects as being negotiable.

   Beta radiation is not included due to reduction allowed for shielding provided by conduit enclosures or groups of cable in tray.

   Neutron radiation is not included due to the gamma radiation equivalent being insignificant in comparison to the gamma TID.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-22
MANUFACTURER'S QUALIFICATION REPORT NO. TD-79-595A-2 REV. 0
QUALIFICATION METHOD Test & Analysis
EQUIPMENT DESCRIPTION Insulated Electrical Lug Connectors
MANUFACTURER/MODEL NO. Burndy/YAES-K
TESTED DEVICE MODEL NO. YAES-K

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,408 Hours
AVERAGE	FB-5	127°F	338,440 Hours
MINIMUM	DG-1	40°F	3,489 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-5	258/128°F Max.	49 Hours
SRVD	CT-3	120/90 °F Max.	108 @ 17 Hours
Plant Shutdown	AB-2	140°F Max.	54,774 Hours
RADIATION DOSE (RADS, TID)	AB-7	3.0×10^6 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 136°C/7 Days Plus Thermal Current Aging (5)
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.25×10^8 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & Loaded - Rated AC Potential & 18 Amp.
FUNCTION TIME (FT)	(J) 180 Days	110-Day LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-7	310°F	346°F	36°F
PRESSURE (PSIG)	CT-3	12 PSIG	113 PSIG	101 PSIG
R.H. (%)	CT-3	100%	100%	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS) (6)	AB-4	$4.1 \times 10^7 \gamma$ Rads	$22.2 \times 10^7 \gamma$ Rads (2)	$18.1 \times 10^7 \gamma$ Rads

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/		/
/		/		/
/		/		/

REVIEWED BY G. S. Koenig / 2-2-84
CHECKED BY [illegible] /
APPROVED BY [illegible] 3/18/84

QUALIFICATION SUMMARY (FILE NO.) SP-33-00-22

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Thermal life of the Kynar insulation on the lug was calculated using Arrhenius methodology.

6. Beta radiation is not included due to reduction allowed for shielding provided by conduit and/or enclosures which justifies the beta effects as being negotiable.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-091-000-02
MANUFACTURER'S QUALIFICATION REPORT NO. 734-79.005 REV. 3
QUALIFICATION METHOD Type Test
EQUIPMENT DESCRIPTION Differential Pressure Switch
MANUFACTURER/MODEL NO. Solon/7PS2DW
TESTED DEVICE MODEL NO. 7PS1ADW

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-7	138°F	8,408 Hours
AVERAGE	FB-7	111°F	338,440 Hours
MINIMUM	FB-7	96°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	FB-7	163°F	49 Hours
RADIATION DOSE (RADS, TID)	FB-7	8.8×10^2 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 165°F/100 Days, 122°F/30 Days, 150°F/21 Days, 250°F/6 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/33 Months
LIFE-LIMITING COMPONENT Diaphragm ("BUNA N" Compound)
TEST RADIATION DOSE (TID) 1×10^7 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Equip. Passed Functional Testing after Each Aging Test
FUNCTION TIME (FT)	J (180 Days)	Equip. Passed Functional Testing after Each Aging Test
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	FB-7	139°F	250°F	111°F
PRESSURE (PSIG)	FB-7	Atmospheric	2.0 PSIG	2.0 PSIG
R.H. (%)	FB-7	90%	100%	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS) (TID)	FB-7	7.37×10^5 Rads	9.99×10^5 Rads (2)	> 10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY T. N. Rockwell / 2-2-84
CHECKED BY [illegible] / [illegible]
APPROVED BY [illegible] 13/18/84

QUALIFICATION SUMMARY (FILE NO.) SP-091-000-02

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP091-000-02 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP091-000-02

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD	EC CAT ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1M15 N 0061A	ANNULUS EXHAUST GAS TREATMENT SYSTEM	SOLON	FB-7	A	A1	J	YES	N/A		YES	C	40Y	SP091-000-02
	ANNULUS SPACE	7PS2DW	HARSH					0.05 SEC				33M	
	C91 DIFF. PRESS SWITCH		IBG/05-620				YES						
1M15 N 0061B	ANNULUS EXHAUST GAS TREATMENT SYSTEM	SOLON	FB-7	A	A1	J	YES	N/A		YES	C	40Y	SP091-000-02
	ANNULUS SPACE	7PS2DW	HARSH					0.05 SEC				33M	
	C91 DIFF. PRESS SWITCH		IBH/05-620				YES						

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-506-00-1
MANUFACTURER'S QUALIFICATION REPORT NO. 8LR90318/8LR90335/8LR90339 REV. 4
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Motor
MANUFACTURER/MODEL NO. Siemens/Allis/182T
TESTED DEVICE MODEL NO. Motorette

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-4	113°F	8,372 Hours
AVERAGE	AB-4	101°F	336,992 Hours
MINIMUM	AB-4	86°F	3,489 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	FB-4/AB-2	155/106°F	49 Hours
+Shutdown$_2$	AB-2	140/106°F	24475.5 Hours
Continuation of Shutdown	AB-2	140/106°F	28,800 Hours
+Shutdown$_1$	AB-4	147/113°F	1498.5 Hours
RADIATION DOSE (RADS, TID)	AB-2	6.2×10^5 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 220°C/550 Hours; 200°C/1400 Hours; 180°C/4,800 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/15 Years
LIFE-LIMITING COMPONENT Anti-Friction Bearings
TEST RADIATION DOSE (TID) 2.0×10^8 γ (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	See Note 5
FUNCTION TIME (FT)	J (180 Days)	See Note 6
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-4	160°F	See Note 6	See Note 6
PRESSURE (PSIG)	AB-4	0.6 PSIG	See Note 7	See Note 7
R.H. (%)	AB-4	100% Air/Steam	100%	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	AB-4	4.1×10^7 γ	2.0×10^8 γ (2)	1.59×10^8

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY J. Smith / 3/16/84
CHECKED BY Eddie B. Harris 3-19-84
APPROVED BY [illegible] 3/20/84

QUALIFICATION SUMMARY (FILE NO.) SP-506-00-01

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

General Note: The normal/abnormal temperature profile is an envelope of two zones. The total duration will add up to greater than 40 years as we have taken the conservative approach of addressing transients seen in one zone but not in the other or transients with greater duration in one zone.

+Zone AB-2 heats up to 140°F/106°F during shutdown for 25,974 hours while Zone AB-4 heats up to 147°F/113°F during shutdown for 1498.5 hours. Therefore, I have used the following breakdown:

$Shutdown_1$	147/113	1498.5 hr.
$Shutdown_2$	140/106	25974-1498.5 = 24475.5 hr.

5. Each motorette was exposed to repeated cycles of thermal exposure, mechanical stress and moisture in sequence, until failure occurred as determined by voltage test. In order to check the condition of the samples and determine when the end of their useful life had been reached, a 60-Hertz over-voltage was applied after each successive exposure to heat, mechanical stress and moisture.

QUALIFICATION SUMMARY (FILE NO.) SP-506-00-01

SUPPLEMENTAL NOTES (Continued):

6. The subject motors are known to operate at 50°C use by resistance at rated load by test.

   Under normal operating conditions at even the maximum ambient temperature of 113°F (45°C) the total motor temperature is 95°C. The projected life is in excess of 750,000 hours or over 80 years on continuous service.

   For normal shutdown at maximum temperature of 147°F (63.9°C) the total temperature of 113.9°C results in a projected life of about 300,000 hours.

   For accident conditions where maximum temperature reaches 160°F (71.1°C), the total temperature of 121.1°C results in a projected life of about 160,000 hours.

   Under these circumstances, the subject motors are conservatively qualified for a normal installed life of forty years plus the post DBE period. This qualification can be further supported by taking the overall time averaged temperature calculated below.

	°F		Duration Hours				
Normal Max.	113	x	8372	=	946036	43659878	107.01°F Avg.
Normal Avg.	101	x	336992	=	34036192	407996 or	41.7°C Avg.
Normal Min.	86	x	3489	=	300054		
Loss of HVAC	154*	x	49	=	7546	Avg. Operating Temp. of	
Shutdown	140*	x	24475.5	=	3426570	91.7°C	
Continuation of Shutdown	140*	x	28880	=	4032000	Thus, the projected life is	
Shutdown	147*	x	1498.5	=	220279.5	in excess of 750,000 hours	
Accident	160*	x	4320	=	691200	or over 80 years on continuous	
			407996		43659878	service	

*Maximum Values Used

7. Maximum pressure reached during accident conditions is 0.6 psig. This should have no significant detrimental aging effect on this equipment.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 28ESP506-000-01
SELECT :
SORT : 01
TITLE : EQRL SP506-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
OC41 C 0002A	STANDBY LIQ. CONTROL SYSTEM SLCS TRANSFER PUMP 506 MOTOR (5HP)	SIEMENS-ALLIS RG/182T	FB-4 MILD IBI/05-620	A	A4	J	YES	N/A N/A		YES	C 40Y 15Y	SP506-000-01
OC41 C 0002B	STANDBY LIQ. CONTROL SYSTEM SLCS TRANSFER PUMP 506 MOTOR (5HP)	SIEMENS-ALLIS RG/182T	FB-4 MILD IBI/05-620	A	A4	J	YES	N/A N/A		YES	C 40Y 15Y	SP506-000-01
1E12 C 0003	RESIDUAL HEAT REMOVAL SYSTEM WATER LEG PUMP 506 MOTOR (5HP)	SIEMENS-ALLIS RG/182T	AB-4 HARSH AXB/05-574	A	A4	J	YES	N/A N/A		YES	C 40Y 15Y	SP506-000-01
1E21 C 0002	LOW PRESSURE CORE SPRAY SYSTEM WATER LEG PUMP 506 MOTOR (5HP)	SIEMENS-ALLIS RG/182T	AB-2 HARSH AXC/07-574	A	A4	J	YES	N/A N/A		YES	C 40Y 15Y	SP506-000-01
1 1E22 C 0003	HIGH PRESSURE CORE SPRAY SYSTEM WATER LEG PUMP 506 MOTOR (5HP)	SIEMENS-ALLIS RG/182T	AB-2 HARSH AXB/02-574	A	A4	J	YES	N/A N/A		YES	C 40Y 15Y	SP506-000-01
1 1E51 C 0003	[illegible]TOR CORE ISOLATION COOLING [illegible]R LEG PUMP [illegible] 5HP MOTOR	SIEMENS-ALLIS RG/182T	AB-4 HARSH AXB/06-574	A	A4	J	YES	N/A N/A		YES	C 40Y 15Y	SP506-000-01

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-524-00
MANUFACTURER'S QUALIFICATION REPORT NO. 734-79.012 REV. 0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Electric Actuator
MANUFACTURER/MODEL NO. ITT General Controls 1NH95
TESTED DEVICE MODEL NO. NH91C4069E1F6N11

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-3	105°F	7,731 Hours
AVERAGE	CT-3	87°F	322,115 Hours
MINIMUM	CT-3	62°F	3,221 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	CT-3	Max. 131°F	49 Hours
SRVD	CT-3	Max. 120°F	(5) 17 Hours
RADIATION DOSE (RADS, TID)	CT-3	2.71×10^5 γ (2)	40 Years

ACCELERATED AGING TEMP./TIMES 140°F/ 3 Months
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/20,000 Hours Operation or 6-8 Years
LIFE-LIMITING COMPONENT Non-Metallic Parts (11)
TEST RADIATION DOSE (TID) 5×10^6 (2)

OPERABILITY SUMMARY.

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1 (Must Function)	Actuator Functioned
FUNCTION TIME (FT)	A (0-45 Secs.) (6)	See Note 6
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	1 Second	1" Per Second with 30% Deviation (5 Sec.) (10)

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-3	180°F	212°F	+32°F (+17.8%)
PRESSURE (PSIG)	CT-3	10.3 PSIG	0 PSIG (10)	-10.3 PSIG
R.H. (%)	CT-3	100%	100%	N/A
SPRAY	CT-7	Demineralized Water	Did not Subject (10)	N/A
SUBMERGENCE	CT-3	N/A (8)	N/A	N/A
RADIATION (RADS)	CT-3	6.3×10^5 TID γ (9)	5×10^6 (2)	

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY S. R. Mannon 3/16/84
CHECKED BY Eddie B. Thomas Jr. 3-19-84
APPROVED BY [illegible] 3/20/84

QUALIFICATION SUMMARY (FILE NO.) SP-524-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   SP-524 Bill of Material RNN-14

5. Seventeen-hour duration used for SRV discharge temperature transient for conservatism.

6. Valve normally open and is to close on LOCA, or fail closed, valve is only required to operate a few seconds after accident, but must be qualified for one hour to meet minimum requirements.

7. All accident summary parameters based on one hour function time discussed in note 6.

8. Actuators located above submergence level.

9. Beta radiation not applicable since outer casing will shield internal parts.

10. Additional justification and support being addressed.

11. With the exception of the motor, solenoid coils, terminal blocks, and voice coil.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 09E524
SELECT : 10EITT GENERAL CONTROLS
SORT : 01
TITLE : ITT GENERAL CONTROL

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT OPER DEMO SEAL	ACC RES TME H2/H2 DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
OP42 F 0315A	EMERGENCY CLOSED COOLING SYSTEM CONT. COMPLEX CHILLER OUT. ISO 524 ELECTROHYDRAULIC	ITT GENERAL CONTROLS NH93J8073F5CD306XXOO OPERATOR	CB-5 MILD CCE/03-574	D	A4	J	N/A			
OP42 F 0315B	EMERGENCY CLOSED COOLING SYSTEM CONT. COMPLEX CHILLER OUT. ISO 524 ELECTROHYDRAULIC	ITT GENERAL CONTROLS NH93J8073F5CD306XXOO OPERATOR	CB-5 MILD CCC/03-574	D	A4	J	N/A			
OP42 F 0315C	EMERGENCY CLOSED COOLING SYSTEM CONT. COMPLEX CHILLER OUT. ISO 524 ELECTROHYDRAULIC	ITT GENERAL CONTROLS NH93J8073F5CD306XXOO OPERATOR	CB-5 MILD CCD/03-574	D	A4	J	N/A			
1D17 F 0071A	PLANT RADIATION MONITORING SYSTEM DW ATMOS MONITORING OUTBD 524 ELECTROHYDRAULIC	ITT GENERAL CONTROLS NH95J4673F29N OPERATOR	FB-2 MILD IBB/07-620	A	A4	A	YES N/A	YES	T 40Y 40Y	SP049-091-02
1D17 F 0081A	PLANT RADIATION MONITORING SYSTEM CNT ATMOS MONITORING OUTBD 524 ELECTROHYDRAULIC	ITT GENERAL CONTROLS NH95J4673F29N OPERATOR	FB-4 MILD IBF/06-665	A	A4	A	YES N/A	YES	T 40Y 40Y	SP049-091-02

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-559-00-1&2
MANUFACTURER'S QUALIFICATION REPORT NO. F-C4350-3, Qualification Data REV. 0/0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION 5-15KV Power Cable
MANUFACTURER/MODEL NO. Anaconda/Uniblend EP
TESTED DEVICE MODEL NO. Uniblend EP

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,410 Hours
AVERAGE	FB-5	127°F	338,486 Hours
MINIMUM	FB-5	122°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-2	154/106°F	49 Hours
Shutdown	AB-2	140/106°F	54,774 Hours
RADIATION DOSE (RADS, TID)	CT-5	2.8×10^7 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 150°C/7 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 20×10^7 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & Loaded @ 2900V, 170 Amp., 60 Hz.
FUNCTION TIME (FT)	(J) 180 Days	30-Day LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-9	217°F	346°F	129°F
PRESSURE (PSIG)	CT-1	12.0 PSIG	113 PSIG	101 PSIG
R.H. (%)	CT-1	100%	100%	N/A
SPRAY	CT-1	Demin. WAter	Borated Water	N/A
SUBMERGENCE	CT-2	3 Seconds	5 Minutes	N/A
RADIATION (RADS) (5)	CT-1	4.2×10^7 Rads	17.2×10^7 Rads (2)	13.0×10^7 Rads 310%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig /2-2-84
CHECKED BY [illegible]
APPROVED BY [illegible] 1-3/18/84

QUALIFICATION SUMMARY (FILE NO.) SP-559-00-1&2

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Beta radiation is not included due to reduction allowed for shielding provided by conduit enclosures or groups of cable in tray.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-560-00-1&2
MANUFACTURER'S QUALIFICATION REPORT NO. QR-1801, QR-1807R1 & Addendum REV. 1/4
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION 600V Chemically XLP Power and Control Cable
MANUFACTURER/MODEL NO. Rockbestos/Firewall III
TESTED DEVICE MODEL NO. Firewall III

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,410 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-4	133°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	141/135°F	300 Hours
Shutdown	AB-2	140/106°F	54,774 Hours
Loss of HVAC	AB-5	258/128°F	49 Hours
RADIATION DOSE (RADS, TID) (8)	DW-2	4.5×10^7 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 150°C/1300 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.0×10^7 Rads (5) (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & Loaded, 600V, 70 Amp., 60 Hz.
FUNCTION TIME (FT)	(J) 180 Days	30-Day LOCA Test Plus 365-Day Post-LOCA Test
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	346°F	16°F
PRESSURE (PSIG)	DW-1	22.1 PSIG	113 PSIG	90.9 PSIG
R.H. (%)	DW-1	Steam	Steam	N/A
SPRAY	DW-1	Demin. Water	Borated Water	N/A
SUBMERGENCE	DW-1	5 Seconds	5 Minutes	N/A
RADIATION (RADS) (6) (7)	DW-1	21.6×10^7 Rads	24.5×10^7 Rads (2)	2.9×10^7 Rads 13%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV. NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig / 2-2-84
CHECKED BY [illegible] / [illegible]
APPROVED BY [illegible] / 12/18/84

QUALIFICATION SUMMARY (FILE NO.) SP-560-00-1&2

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Raychem Test Report 58442-3 included Rockbestos Firewall III. Splice and cable were irradiated to 29×10^7 rads. This value was used for qualification.

6. Cable locations in DW-1 were analyzed to provide location specific radiation values.

7. Beta radiation is not included due to reduction allowed for shielding provided by conduit enclosures or groups of cable in tray.

8. Neutron radiation is not included due to the gamma radiation equivalent being insignificant in comparison to the gamma TID.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-560-00-3&4
MANUFACTURER'S QUALIFICATION REPORT NO. QR-2813, QR-1806R2 & Addendum REV. 0/5
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION 600V Irradiation XLP Power & Control Cable
MANUFACTURER/MODEL NO. Rockbestos/Firewall III
TESTED DEVICE MODEL NO. Firewall III

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,410 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-4	133°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	141/135°F	300 Hours
Shutdown	AB-2	140/106°F	54,774 Hours
Loss of HVAC	AB-5	258/128°F	49 Hours
RADIATION DOSE (RADS, TID) (3)	DW-2	4.5×10^7 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 150°C/850 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 20.0×10^7 Rads (5) (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & Loaded, 600V, 32 Amp., 60 Hz.
FUNCTION TIME (FT)	(J) 180 Days	30-Day LOCA Test Plus 365-Day Post-LOCA Test
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	346°F	16°F
PRESSURE (PSIG)	DW-1	22.1 PSIG	113 PSIG	90.9 PSIG
R.H. (%)	DW-1	Steam	Steam	N/A
SPRAY	DW-1	Demin. Water	Borated Water	N/A
SUBMERGENCE	DW-1	5 Seconds	5 Minutes	N/A
RADIATION (RADS) (6) (7)	DW-1	21.6×10^7 Rads	24.5×10^7 Rads (2)	2.9×10^7 Rads 13%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig / 2-2-84
CHECKED BY Eddie B. Thomas / 3-16-84
APPROVED BY H. A. Mathews / 3/16/84

QUALIFICATION SUMMARY (FILE NO.) SP-560-00-3&4

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Raychem Test Report 58442-3 included Rockbestos Firewall III. Splice and cable were irradiated to 29.0×10^7 rads. This value was used for qualification.

6. Cable locations in DW-1 were analyzed to provide location specific radiation values.

7. Beta radiation is not included due to reduction allowed for shielding provided by conduit enclosures or group of cable in tray.

8. Neutron radiation is not included due to the gamma radiation equivalent being insignificant in comparison to the gamma TID.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-561-00-1,2,3
MANUFACTURER'S QUALIFICATION REPORT NO. F-C5120-1, F-C5120-3, F-C4113 REV. 0/0/0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Class 1E Instrumentation Cable
MANUFACTURER/MODEL NO. Brand-Rex/Instrumentation-Various Number Cond. 16 & 20 AWG
TESTED DEVICE MODEL NO. Instrumentation - Various Number Cond. 16 AWG

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,401 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-4	133°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	141°F Max.	300 Hours
Shutdown	AB-2	140°F Max.	54,774 Hours
Loss of HVAC	AB-5	258°F Max.	49 Hours
RADIATION DOSE (RADS, TID) (8)	DW-2	4.5×10^7 (2)	40 Years

ACCELERATED AGING TEMP./TIMES Group 1, 136°C/7 Days; Group 2, 158°C/7 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 20×10^7 Rads (5) (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & Loaded, 300 VAC, 10 Amp.
FUNCTION TIME (FT)	(J) 180 Days	30-Day LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	385°F	55°F
PRESSURE (PSIG)	DW-1	22.1 PSIG	113 PSIG	90.9 PSIG
R.H. (%)	DW-1	Steam	Steam	N/A
SPRAY	DW-1	Demin. Water	Borated Water	N/A
SUBMERGENCE	DW-1	5 Seconds	5 Minutes	N/A
RADIATION (RADS) (6) (9)	DW-1	21.6×10^7 Rads	24.5×10^7 Rads (2)	2.9×10^7 Rads 13%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig / 2-2-84
CHECKED BY [illegible] / 3-14-84
APPROVED BY [illegible] / 3/16/84

QUALIFICATION SUMMARY (FILE NO.) SP-561-00-1,2,3

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Raychem Test Report 58442-3 included cable with the same type of insulation (XLPE) as the subject cable. Splice and cable were irradiated to 29.0×10^7 rads. This value was used for qualification.

6. Cable locations in DW-1 were analyzed to provide location specific radiation values.

7. Beta radiation is not included due to reduction allowed for shielding provided by conduit enclosures or groups of cable in tray.

8. Neutron radiation is not included due to the gamma radiation equivalent being insignificant in comparison to the gamma TID.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-563-00-2
MANUFACTURER'S QUALIFICATION REPORT NO. PEN-TR-82-54 REV. 0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Electrical Penetration
MANUFACTURER/MODEL NO. Westinghouse/Low Voltage & Instrumentation - Modular Type
TESTED DEVICE MODEL NO. Low Voltage & Instrumentation - Modular Type

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,410 Hours
AVERAGE	FB-5	127°F	338,486 Hours
MINIMUM	FB-5	122°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Hot Standby	CT-4	105°F Max.	26,400 Hours
Loss of HVAC	CT-4	131°F Max.	49 Hours
SRVD	CT-4	120°F Max.	17 Hours
RADIATION DOSE (RADS, TID)	CT-4	2.71×10^5 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 150°C/100 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.2×10^8 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & Loaded, 600VAC, Max.320 Amp, Leak Rate Test
FUNCTION TIME (FT)	(J) 180 Days	31-Day LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-4	184.6°F	340°F	155.4°F
PRESSURE (PSIG)	CT-4	12.0 PSIG	108 PSIG	96 PSIG
R.H. (%)	CT-4	100%	Steam	N/A
SPRAY	CT-7	Demin. Water	Borated Water	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS) (5)	CT-4	1.8×10^7 Rads	22×10^7 Rads (2)	20.2×10^7 Rads 1122%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig / 2-2-84
CHECKED BY Bobby B Chowdhury / 3-16-84
APPROVED BY K. A. Mathenny / 3/18/84

QUALIFICATION SUMMARY (FILE NO.) SP-563-00-2

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Beta radiation is not included due to reduction allowed for shielding provided by conduit and/or enclosures which justifies the beta effects as being negotiable.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP563-000-02 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP563-000-02

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1R72 S 0003	PENETRATIONS-ELECTRICAL LOW VOLTAGE PWR.& CTL. ELEC. PENETR. 563	ELECTRICAL	WESTINGHOUSE WX-33329 PENETRATION	CT-7 HARSH C I/11-656	A	A1	J	YES YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0004	PENETRATIONS-ELECTRICAL LOW VOLTAGE PWR.& CTL. ELEC. PENETR. 563	ELECTRICAL	WESTINGHOUSE WX-33329 PENETRATION	CT-7 HARSH C I/13-657	A	A1	J	YES YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0005	PENETRATIONS-ELECTRICAL LOW VOLTAGE POWER ELEC. PENETRATION 563	ELECTRICAL	WESTINGHOUSE WX-33330 PENETRATION	CT-7 HARSH C I/12-656	A	P		YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0006	PENETRATIONS-ELECTRICAL LOW VOLTAGE POWER ELEC. PENETRATION 563	ELECTRICAL	WESTINGHOUSE WX-33331 PENETRATION	CT-7 HARSH C I/13-657	A	P		YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0007	PENETRATIONS-ELECTRICAL CONTROL ELECTRICAL PENETRATION 563	ELECTRICAL	WESTINGHOUSE WX-33332 PENETRATION	CT-7 HARSH C I/11-652	A	A1	J	YES YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0008	PENETRATIONS-ELECTRICAL CONTROL ELECTRICAL PENETRATION 563	ELECTRICAL	WESTINGHOUSE WX-33333 PENETRATION	CT-7 HARSH C I/11-650	A	A1	J	YES YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0009	PENETRATIONS-ELECTRICAL CONTROL ELECTRICAL PENETRATION 563	ELECTRICAL	WESTINGHOUSE WX-33332 PENETRATION	CT-7 HARSH C I/13-652	A	A1	J	YES YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0010	PENETRATIONS-ELECTRICAL CONTROL ELECTRICAL PENETRATION 563	ELECTRICAL	WESTINGHOUSE WX-33333 PENETRATION	CT-7 HARSH C I/13-650	A	A1	J	YES YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0011	PENETRATIONS-ELECTRICAL CONTROL ELECTRICAL PENETRATION 563	ELECTRICAL	WESTINGHOUSE WX-33334 PENETRATION	CT-7 HARSH C 1/12-657	A	A1	J	YES YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0012	PENETRATIONS-ELECTRICAL LOW VOLTAGE PWR.& CTL. ELEC. PENETR. 563	ELECTRICAL	WESTINGHOUSE WX-33335 PENETRATION	CT-7 HARSH C I/12-652	A	P		YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0013	PENETRATIONS-ELECTRICAL CONTROL ELECTRICAL PENETRATION 563	ELECTRICAL	WESTINGHOUSE WX-33333 PENETRATION	CT-7 HARSH C I/12-650	A	P		YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP563-000-02 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP563-000-02

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1R72 S 0014	PENETRATIONS-ELECTRICAL	WESTINGHOUSE	CT-7	A	P		YES	N/A		YES	T 40Y	SP563-000-02
	LOW VOLTAGE PWR.& CTL. ELEC. PENETR.	WX-33335	HARSH					N/A			40Y	
	563 ELECTRICAL	PENETRATION	C I/13-652					H2				
1R72 S 0015	PENETRATIONS-ELECTRICAL	WESTINGHOUSE	CT-7	A	P		YES	N/A		YES	T 40Y	SP563-000-02
	CONTROL ELECTRICAL PENETRATION	WX-33333	HARSH					N/A			40Y	
	563 ELECTRICAL	PENETRATION	C I/13-650					H2				
1R72 S 0016	PENETRATIONS-ELECTRICAL	WESTINGHOUSE	CT-4	A	A1	J	YES	N/A		YES	T 40Y	SP563-000-02
	INSTRUMENT ELECTRICAL PENETRATION	WX-33336	HARSH					N/A			40Y	
	563 ELECTRICAL	PENETRATION	C I/11-643				YES	H2				
1R72 S 0017	PENETRATIONS-ELECTRICAL	WESTINGHOUSE	CT-4	A	A1	J	YES	N/A		YES	T 40Y	SP563-000-02
	INSTRUMENT ELECTRICAL PENETRATION	WX-33337	HARSH					N/A			40Y	
	563 ELECTRICAL	PENETRATION	C I/11-642				YES	H2				
1R72 S 0018	PENETRATIONS-ELECTRICAL	WESTINGHOUSE	CT-4	A	P		YES	N/A		YES	T 40Y	SP563-000-02
	INSTRUMENT ELECTRICAL PENETRATION	WX-33338	HARSH					N/A			40Y	
	563 ELECTRICAL	PENETRATION	C I/12-643					H2				
1R72 S 0019	PENETRATIONS-ELECTRICAL	WESTINGHOUSE	CT-4	A	P		YES	N/A		YES	T 40Y	SP563-000-02
	INSTRUMENT ELECTRICAL PENETRATION	WX-33339	HARSH					N/A			40Y	
	563 ELECTRICAL	PENETRATION	C I/12-642					H2				
1R72 S 0020	PENETRATIONS-ELECTRICAL	WESTINGHOUSE	CT-4	A	A1	J	YES	N/A		YES	T 40Y	SP563-000-02
	INSTRUMENT ELECTRICAL PENETRATION	WX-33336	HARSH					N/A			40Y	
	563 ELECTRICAL	PENETRATION	C I/13-643				YES	H2				
1R72 S 0021	PENETRATIONS-ELECTRICAL	WESTINGHOUSE	CT-4	A	A1	J	YES	N/A		YES	T 40Y	SP563-000-02
	INSTRUMENT ELECTRICAL PENETRATION	WX-33363	HARSH					N/A			40Y	
	563 ELECTRICAL	PENETRATION	C I/12-642				YES	H2				
1R72 S 0022	PENETRATIONS-ELECTRICAL	WESTINGHOUSE	CT-4	A	P		YES	N/A		YES	T 40Y	SP563-000-02
	INSTRUMENT ELECTRICAL PENETRATION	WX-33340	HARSH					N/A			40Y	
	563 ELECTRICAL	PENETRATION	C I/13-643					H2				
1R72 S 0023	PENETRATIONS-ELECTRICAL	WESTINGHOUSE	CT-4	A	A1	J	YES	N/A		YES	T 40Y	SP563-000-02
	INSTRUMENT ELECTRICAL PENETRATION	WX-33341	HARSH					N/A			40Y	
	563 ELECTRICAL	PENETRATION	C I/13-642				YES	H2				
1R72 S 0024	PENETRATIONS-ELECTRICAL	WESTINGHOUSE	CT-4	A	P		YES	N/A		YES	T 40Y	SP563-000-02
	INSTRUMENT ELECTRICAL PENETRATION	WX-33342	HARSH					N/A			40Y	
	563 ELECTRICAL	PENETRATION	C I/12-643					H2				

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP563-000-02 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP563-000-02

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1R72 S 0025	PENETRATIONS-ELECTRICAL INSTRUMENT ELECTRICAL PENETRATION	563 ELECTRICAL	WESTINGHOUSE WX-33337 PENETRATION	CT-7 HARSH C I/12-652	A	A1	J YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0026	PENETRATIONS-ELECTRICAL INSTRUMENT ELECTRICAL PENETRATION	563 ELECTRICAL	WESTINGHOUSE WX-33343 PENETRATION	CT-3 HARSH C I/11-638	A	A1	J YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0027	PENETRATIONS-ELECTRICAL INSTRUMENT ELECTRICAL PENETRATION	563 ELECTRICAL	WESTINGHOUSE WX-33344 PENETRATION	CT-3 HARSH C I/12-638	A	P	YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0028	PENETRATIONS-ELECTRICAL INSTRUMENT ELECTRICAL PENETRATION	563 ELECTRICAL	WESTINGHOUSE WX-33345 PENETRATION	CT-4 HARSH C I/11-642	A	A1	J YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0029	PENETRATIONS-ELECTRICAL LOW VOLTAGE POWER ELEC. PENETRATION	563 ELECTRICAL	WESTINGHOUSE WX-34147 PENETRATION	CT-7 HARSH C I/11-656	A	P	YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0030	PENETRATIONS-ELECTRICAL INSTRUMENT ELECTRICAL PENETRATION	563 ELECTRICAL	WESTINGHOUSE WX-34488 PENETRATION	CT-4 HARSH C I/11-643	A	A1	J YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0031	PENETRATIONS-ELECTRICAL INSTRUMENT ELECTRICAL PENETRATION	563 ELECTRICAL	WESTINGHOUSE WX-34489 PENETRATION	CT-7 HARSH C I/11-650	A	P	YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0033	PENETRATIONS-ELECTRICAL INSTRUMENT ELECTRICAL PENETRATION	563 ELECTRICAL	WESTINGHOUSE WX-34490 PENETRATION	CT-7 HARSH C I/12-650	A	P	YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0035	PENETRATIONS-ELECTRICAL INSTRUMENT ELECTRICAL PENETRATION	563 ELECTRICAL	WESTINGHOUSE WX-34491 PENETRATION	CT-4 HARSH C I/13-642	A	A1	J YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0036	PENETRATIONS-ELECTRICAL INSTRUMENT ELECTRICAL PENETRATION	563 ELECTRICAL	WESTINGHOUSE WX-34492 PENETRATION	CT-7 HARSH C I/12-650	A	P	YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02
1R72 S 0038	PENETRATIONS-ELECTRICAL INSTRUMENT ELECTRICAL PENETRATION	563 ELECTRICAL	WESTINGHOUSE WX-34493 PENETRATION	CT-7 HARSH C I/12-652	A	P	YES	N/A H2	N/A	YES	T	40Y 40Y	SP563-000-02

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-567-00-1
MANUFACTURER'S QUALIFICATION REPORT NO. Isomedix Test Report, Addendum to Test, Letter-Rev.0/0/0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Thermocouple Cable
MANUFACTURER/MODEL NO. Samuel Moore Co./Thermocouple Cable - Multi - Pair 16 AWG
TESTED DEVICE MODEL NO. Multi-Pair 16 AWG Thermocouple Cable

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,410 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-4	133°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	141°F Max.	300 Hours
Shutdown	AB-2	140°F Max.	54.774 Hours
Loss of HVAC	AB-5	258°F Max.	49 Hours
RADIATION DOSE (RADS, TID) (8)	DW-2	4.5×10^7 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 1 Sample - 150°C/7 Days + 121°C/7 Days; 2 Samples- 163°C/7 Days + 121°C/7 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 20.0×10^7 Rads (5) (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & Loaded, 600 VAC, 0.5 Amp.
FUNCTION TIME (FT)	(J) 180 Days	30Day LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY:

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	340°F	10°F
PRESSURE (PSIG)	DW-1	22.1 PSIG	105 PSIG	82.9 PSIG
R.H. (%)	DW-1	Steam	Steam	N/A
SPRAY	DW-1	Demin. Water	Borated Water	N/A
SUBMERGENCE	DW-1	5 Seconds	1 @ 5 Min./2 @ 1 Min.	N/A
RADIATION (RADS) (6) (7)	DW-1	21.6×10^7 Rads	24.5×10^7 Rads (2)	2.9×10^7 Rads 13%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig / 2-2-84
CHECKED BY Edward B. Thornhill 3-16-84
APPROVED BY R. A. Mathews 3/18/84

QUALIFICATION SUMMARY (FILE NO.) SP-567-00-1

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Raychem Test Report 58442-3 included cable with insulation of the same polymeric family (XLPE) as the subject cable (XLPO). Splice and cable were irradiated to 29.0×10^7 rads. This value was used for qualification.

6. Cable locations in DW-1 were analyzed to provide location specific radiation values.

7. Beta radiation is not included due to reduction allowed for shielding provided by conduit enclosures or groups of cable in tray.

8. Neutron radiation is not included due to the gamma radiation equivalent being insignificant in comparison to the gamma TID.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-568-000-01
MANUFACTURER'S QUALIFICATION REPORT NO. B0058 REV. -
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Electric Valve Actuator
MANUFACTURER/MODEL NO. Limitorque Corporation/SMB, SB, and SMB/HBC Models
TESTED DEVICE MODEL NO. SMB-0-25

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-6	144°F	8,408 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	AB-7	60°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-5	258°F	49 Hours
RADIATION DOSE (RADS, TID)	DW-1	2.8×10^7 (2)	Over 40-Year Life

ACCELERATED AGING TEMP./TIMES 356°F/100 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/40 Years
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.04×10^8 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1, A4	Actuator Functioned Before, During & After Testing
FUNCTION TIME (FT)	A thru J*	Actuator Functioned Before, During & After Testing
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	Various	See Note 1

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	340°F	10°F (Note 2)
PRESSURE (PSIG)	DW-1	22.1 PSIG	105 PSIG	83 PSIG (" 3)
R.H. (%)	DW-1	100%	100%	N/A
SPRAY	DW-1	Demin. Water (Note 4)	See Note 5	N/A
SUBMERGENCE	DW-1	Demin. Water (Note 6)	See Note 7	N/A
RADIATION (RADS)	DW-1	2.7×10^8 Rads TID	2.04×10^8 Rads TID (2)	See Note 8

See Attachment A
*0 thru 180 Days

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY S. R. Mannon / 2-2-84
CHECKED BY Eddie B Clemmons 1/3/84
APPROVED BY W A Mathenny 1/3/84

QUALIFICATION SUMMARY (FILE NO.) SP-568-000-01

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

ATTACHMENT A

NOTES FOR SYSTEM COMPONENT EVALUATION WORKSHEET

1. The opening stroke times of the test unit both during and after testing were within 0.3% of the opening stroke time before testing. The closing stroke times of the test unit both during and after testing were within 1% of the closing stroke time before testing.

2. See note 1 of Attachment B (Supplemental notes for NUREG 0588 EQR Review).

3. See note 2 of Attachment B (Supplemental notes for NUREG 0588 EQR Review).

4. Sprays shall be terminated at a maximum of 30 days post accident. Sprays may be turned on again if required to limit containment airspace temperature to 185°F.

5. During the low temperature portions of the test, a heated pool of water and daily injections of steam insured complete saturation of the test chamber atmosphere.

6. Total duration of submergence is 5 seconds.

7. During the testing, it was discovered that the test chamber had become flooded with steam condensate and that the valve actuator had been completely submerged. The water was drained from the actuator and the test continued as outlined. The unit performed normally when cycled after the period of flooding. Since submergence was not part of the test procedure, the ability to successfully endure flooding goes beyond the requirements of the actuator.

8. See category 1 of January 17, 1983 memo from J. Tate to S.R. Mannon, "Drywell Radiation Environments for Valve Qualification" (Attachment C).

Perry Nuclear Power Plant EQR File No.: SP568-00-01

Attachment B

Note 1. 6.3.1.5 (1)

Testing was performed in a saturated steam environment where the pressure was allowed to follow the temperature / pressure saturation characteristics. Although the temperature margin was not 15°F, the use of saturated steam allows the substitution of the more severe saturated steam conditions for the temperature margin. The temperature margin therefore can be considered to have met the requirements of IEEE 323-1974, Sec 6.3.1.5

Note 2 6.3.1.5(2)

The pressure margin exceeds the maximum 10psi. This margin is not excessive because the valve operators are a vented design which equalizes internal and external pressures quickly and therefore no significant differential pressure is established for any significant amount of time.

Note 3 6.3.1.5(4)

The effect of increasing or decreasing the applied voltage is to increase or decrease the motor speed. The motor is oversized for the application so that there is always enough torque to open or close the valve. The only effect, therefore, of changing

ATTACHMENT C

Memorandum Gilbert/Commonwealth

to S. R. MANNON

from J. Tate

subject W.O. 04-4549-339
Drywell Radiation Environments
for Valve Qualification 17 Jan. 1983

Ref: 1) Memo S. R. Mannon to J. Tate, 8 Nov. 1982, "Valves Subjected to Excessive Radiation."
2) Speed Memo S. R. Mannon to J. Tate, 29 Nov. 1982, "Mechanical Valves."

In response to your request, the valve actuators given in Reference 1 are categorized as follows:

1) For the required post-LOCA operating time, the total integrated dose (TID), excluding the beta dose, is less than the 2.04×10^8 Rad qualification dose. This category includes:

Actuator Tag No.	Required Post-LOCA Operating Time
B21-F016	15 seconds
E12-F009	6 hours
E51 ~~E61~~-F076	12 seconds
G33-F001	15 seconds

2) By performing an analysis to account for geometry and shielding effects, the TID, excluding the beta dose, has been shown to be less than the 2.04×10^8 Rad qualification dose. This category includes:

Actuator Tag No.	Required Post-LOCA Operating Time
B21-F001	30 days
B21-F002	30 days
B21-F005	30 days

3) The 1×10^7 Rad qualification dose (Reference 2) does not meet the TID for the required 12 hour operating time in the drywell. Only actuator tag no. E51-F063 is in this category. To meet the qualification dose, this actuator must be shielded, relocated to a lower radiation area or replaced by an actuator qualified to the higher dose.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

AS OF 00636 03/22/84

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD ELEV	EC CAT	FT SEAL	OPER DEMO	ACC RES TME H2/H2 DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1B21 F 0016	NUCLEAR BOILER SYSTEM F022 ABC&D BEFORE SEAT DR. 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	DW-1 HARSH C I/17-624	A	A1	J	YES	N/A 20.0 SEC H2 LATER	YES	T 40Y 40Y	SP568-000-01
1B21 F 0019	NUCLEAR BOILER SYSTEM F022 ABC&D BEFORE SEAT DR. 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-7 HARSH AXC/04-620	A	A1	J	YES	N/A 20.0 SEC	YES	T 40Y 40Y	SP568-000-01
1B21 F 0065A	NUCLEAR BOILER SYSTEM RX. FEED WATER ISO. 52102 MOTOR OPERATOR	LIMITORQUE SMB-4-100	AB-7 HARSH AXB/06-605	A	A1	B	YES	N/A 84.0 SEC	YES	T 40Y 40Y	SP568-000-01
1B21 F 0065B	NUCLEAR BOILER SYSTEM RX. FEED WATER ISO. 52102 MOTOR OPERATOR	LIMITORQUE SMB-4-100	AB-7 HARSH AXB/04-620	A	A1	B	YES	N/A 90.0 SEC	YES	T 40Y 40Y	SP568-000-01
1B21 F 0067A	NUCLEAR BOILER SYSTEM OUTBRD. MSIV BEFORE SEAT DR. 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-7 HARSH AXC/05-620	A	A1	J	YES	N/A N/A	YES	T 40Y 40Y	SP568-000-01
1B21 F 0067B	NUCLEAR BOILER SYSTEM OUTBRD. MSIV BEFORE SEAT DR. 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-7 HARSH AXC/04-620	A	A1	J	YES	N/A N/A	YES	T 40Y 40Y	SP568-000-01
1B21 F 0067C	NUCLEAR BOILER SYSTEM OUTBRD. MSIV BEFORE SEAT DR. 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-7 HARSH AXC/05-620	A	A1	J	YES	N/A N/A	YES	T 40Y 40Y	SP568-000-01
1B21 F 0067D	NUCLEAR BOILER SYSTEM OUTBRD. MSIV BEFORE SEAT DR. 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-7 HARSH AXC/05-620	A	A1	I	YES	N/A N/A	YES	T 40Y 40Y	SP568-000-01
1B21 F 0068	NUCLEAR BOILER SYSTEM STEAM LINE OUTBOARD DRAIN 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-7 HARSH AXB/04-620	A	A1	J	YES	N/A	YES	T 40Y 40Y	SP568-000-01
1C11 F 0083	CONTROL ROD DRIVE HYDRAULIC CONTROL PEN 204 OUTBOARD ISO 52102 MOTOR OPERATOR	LIMITORQUE SMB-00-10	FB-2 MILD IBC/08-620	A	A4	J	YES	N/A 12.0 SEC	YES	T 40Y 40Y	SP568-000-01
1C41 F 0001A	STANDBY LIQUID LEVEL CONTROL STORAGE TANK ISO 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-5	CT-4 HARSH C 0/15-642	A	A1	B	YES	N/A 20.0 SEC	YES	T 40Y 40Y	SP568-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1C41 F 0001B	STANDBY LIQUID LEVEL CONTROL STORAGE TANK ISO 53106	MOTOR OPERATOR	LIMITORQUE SMB-000-5	CT-4 HARSH C 0/15-642	A	A1	B	YES	N/A 20.0	SEC	YES	T	40Y 40Y	SP568-000-0
1E12 F 0003A	RESIDUAL HEAT REMOVAL SYSTEM FLW CNTRL AFTER HX POS IND MAX 52102	MOTOR OPERATOR	LIMITORQUE SMB-3-60	AB-4 HARSH AXC/06-574	A	A1	J	YES	N/A 79.0	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0003B	RESIDUAL HEAT REMOVAL SYSTEM FLW CNTRL AFTER HX POS IND MAX 52102	MOTOR OPERATOR	LIMITORQUE SMB-3-60	AB-4 HARSH AXC/04-574	A	A1	J	YES	N/A 79.0	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0004A	RESIDUAL HEAT REMOVAL SYSTEM SUPP.POOL SUCTION ISO LOOP A 52102	MOTOR OPERATOR	LIMITORQUE SMB-1-25	AB-4 HARSH AXC/05-574	A	A1	J	YES	N/A 124.	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0004B	RESIDUAL HEAT REMOVAL SYSTEM SUPP.POOL SUCTION ISO LOOP B 52102	MOTOR OPERATOR	LIMITORQUE SMB-1-25	AB-4 HARSH AXC/03-574	A	A1	J	YES	N/A 117.	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0006A	RESIDUAL HEAT REMOVAL SYSTEM SHUTDOWN DUCT. TO LOOP A ISO 52102	MOTOR OPERATOR	LIMITORQUE SMB-1-40	AB-4 HARSH AXC/06-574	A	A1	J	YES	N/A 87.2	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0006B	RESIDUAL HEAT REMOVAL SYSTEM SHUTDOWN SUCT. TO LOOP B ISO 52102	MOTOR OPERATOR	LIMITORQUE SMB-1-40	AB-4 HARSH AXC/03-574	A	A1	J	YES	N/A 87.2	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0008	RESIDUAL HEAT REMOVAL SYSTEM PEN #P421 OUTBRD ISO.PNEU.TEST 52102	MOTOR OPERATOR	LIMITORQUE SMB-3-80	AB-7 HARSH SMC/05-620	A	A1	J	YES	N/A 34.0	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0009	RESIDUAL HEAT REMOVAL SYSTEM PEN P421 INBD.ISO.CLS=33SEC 52102	MOTOR OPERATOR	LIMITORQUE SMB-3-80	DW-1 HARSH C I/01-605	A	A1	J	YES	N/A 34.0 H2	SEC LATER	YES	T	40Y 40Y	SP568-000-01
1E12 F 0011A	RESIDUAL HEAT REMOVAL SYSTEM RHR STEAM COND.TO SUPP.POOL 52102	MOTOR OPERATOR	LIMITORQUE SMB-00-5	AB-4 HARSH AXC/07-599	A	A3	J	YES	N/A 32.7	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0011B	RESIDUAL HEAT REMOVAL SYSTEM RHR STEAM COND. TO SUPP.POOL 52102	MOTOR OPERATOR	LIMITORQUE SMB-00-5	AB-4 HARSH AXC/03-599	A	A3	J	YES	N/A 32.7	SEC	YES	T	40Y 40Y	SP568-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG / EQUIP. DESCRIPTION	MANUFACTURER / MODEL	ZONE / LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1E12 F 0021	RESIDUAL HEAT REMOVAL SYSTEM C PMP TEST TO SUPP.POOL R2341 52102 MOTOR OPERATOR	LIMITORQUE SMB-3-60	AB-4 HARSH AXC/04-599	A	A3	J	YES	N/A 79.0	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0023	RESIDUAL HEAT REMOVAL SYSTEM RHR TO RPV HEAD SPRAY ISO 52102 MOTOR OPERATOR	LIMITORQUE SMB-1-25	AB-4 HARSH AXC/06-620	A	A1	J	YES	N/A 34.0	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0024A	RESIDUAL HEAT REMOVAL SYSTEM A PMP TEST TO SUPP.POOL 52102 MOTOR OPERATOR	LIMITORQUE SMB-1-40	AB-4 HARSH AXC/07-599	A	A3	J	YES	N/A 87.2	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0024B	RESIDUAL HEAT REMOVAL SYSTEM B PMP TEST TO SUPP.POOL 52102 MOTOR OPERATOR	LIMITORQUE SMB-1-40	AB-4 HARSH AXC/03-599	A	A3	J	YES	N/A 87.2	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0026A	RESIDUAL HEAT REMOVAL SYSTEM RHR STEAM COND TO RCIC PUMP 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-4 HARSH AXB/06-574	A	A3	J	YES	N/A 20.0	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0026B	RESIDUAL HEAT REMOVAL SYSTEM RHR STEAM COND TO RCIC PUMP 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-4 HARSH AXB/04-574	A	A3	J	YES	N/A 20.0	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0027A	RESIDUAL HEAT REMOVAL SYSTEM PEN#P113 OUTBOARD ISO 52102 MOTOR OPERATOR	LIMITORQUE SMB-1-25	AB-4 HARSH AXC/07-620	A	A1	J	YES	N/A 60.0	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0027B	RESIDUAL HEAT REMOVAL SYSTEM PEN#P412 OUTBOARD ISO 52102 MOTOR OPERATOR	LIMITORQUE SMB-1-25	AB-4 HARSH AXC/03-620	A	A1	J	YES	N/A 60.0	SEC	YES	T	40Y 40Y	SP568-000-01
1E12 F 0028A	RESIDUAL HEAT REMOVAL SYSTEM PEN #P113 INBRD ISO (CONT SP) 52102 MOTOR OPERATOR	LIMITORQUE SMB-1-25	CT-6 HARSH C 0/01-642	A	A1	H	YES	N/A 60.0 H2	SEC LATER	YES	T	40Y 40Y	SP568-000-01
1E12 F 0028B	RESIDUAL HEAT REMOVAL SYSTEM PEN #P412 INBRD ISO (CONT SP) 52102 MOTOR OPERATOR	LIMITORQUE SMB-1-25	CT-6 HARSH C 0/17-642	A	A1	H	YES	N/A 60.0 H2	SEC LATER	YES	T	40Y 40Y	SP568-000-01
1E12 F 0037A	RESIDUAL HEAT REMOVAL SYSTEM RHR TO CONTAINMENT POOLS 52102 MOTOR OPERATOR	LIMITORQUE SMB-2-40	CT-8 HARSH C 0/01-664	A	A1	J	YES	N/A 62.0 H2	SEC LATER	YES	T	40Y 40Y	SP568-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

AS OF 00636 03/22/84

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT ELEV	EC	FT	OPER DEMO SEAL	ACC RES TME H2/H2 DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1E12 F 0037B	RESIDUAL HEAT REMOVAL SYSTEM RHR TO CONTAINMENT POOLS F3548 52102 MOTOR OPERATOR	LIMITORQUE SMB-2-40	CT-7 HARSH C 0/17-642	A	A1	J	YES	N/A 90.0 SEC H2 LATER	YES	T 40Y 40Y	SP568-000-01
1E12 F 0040	RESIDUAL HEAT REMOVAL SYSTEM RHR "A" LRW SYS CONTROL FLOW 52102 MOTOR OPERATOR	LIMITORQUE SMB-1-25	AB-2 HARSH AXD/02-574	A	A3	J	YES	N/A 19.2 SEC	YES	T 40Y 40Y	SP568-000-01
1E12 F 0042A	RESIDUAL HEAT REMOVAL SYSTEM LPCI A PEN#P113 INBRD ISO PNEU 52102 MOTOR OPERATOR	LIMITORQUE SMB-2-80	CT-3 HARSH C 0/01-624	A	A1	J	YES	N/A 25.9 SEC H2 LATER	YES	T 40Y 40Y	SP568-000-01
1E12 F 0042B	RESIDUAL HEAT REMOVAL SYSTEM LPCI B PEN#P412 INBRD ISO PNEU 52102 MOTOR OPERATOR	LIMITORQUE SMB-2-80	CT-3 HARSH C 0/17-620	A	A1	J	YES	N/A 25.9 SEC H2 LATER	YES	T 40Y 40Y	SP568-000-01
1E12 F 0042C	RESIDUAL HEAT REMOVAL SYSTEM LPCI C PEN#P411 OTBRD ISO PNEU 52102 MOTOR OPERATOR	LIMITORQUE SMB-2-80	AB-4 HARSH AXC/03-620	A	A4	J	YES	N/A 25.9 SEC LATER	YES	T 40Y 40Y	SP568-000-01
1E12 F 0047A	RESIDUAL HEAT REMOVAL SYSTEM RHR TO HX ISO 52102 MOTOR OPERATOR	LIMITORQUE SMB-1-40	AB-4 HARSH AXB/06-620	A	A1	J	YES	N/A 87.2 SEC	YES	T 40Y 40Y	SP568-000-01
1E12 F 0047B	RESIDUAL HEAT REMOVAL SYSTEM RHR TO HX ISO 52102 MOTOR OPERATOR	LIMITORQUE SMB-1-40	AB-4 HARSH AXB/04-620	A	A1	J	YES	N/A 87.2 SEC	YES	T 40Y 40Y	SP568-000-01
1E12 F 0048A	RESIDUAL HEAT REMOVAL SYSTEM RHR BALANCING VLV MAX 52102 MOTOR OPERATOR	LIMITORQUE SMB-3-60	AB-4 HARSH AXB/07-599	A	A1	J	YES	N/A 79.0 SEC	YES	T 40Y 40Y	SP568-000-01
1E12 F 0048B	RESIDUAL HEAT REMOVAL SYSTEM RHR BALANCING VLV MAX 52102 MOTOR OPERATOR	LIMITORQUE SMB-3-60	AB-4 HARSH AXB/07-599	A	A1	J	YES	N/A 79.0 SEC	YES	T 40Y 40Y	SP568-000-01
1E12 F 0049	RESIDUAL HEAT REMOVAL SYSTEM RHR "A" TO LRW SYS ISO 52102 MOTOR OPERATOR	LIMITORQUE SMB-00-10	AB-4 HARSH AXB/05-574	A	A3	J	YES	N/A 49.0 SEC	YES	T 40Y 40Y	SP568-000-01
1E12 F 0052A	RESIDUAL HEAT REMOVAL SYSTEM MAIN STM TO RHR HX ISO 52102 MOTOR OPERATOR	LIMITORQUE SMB-2-40	AB-4 HARSH AXC/07-620	A	A3	J	YES	N/A 70.0 SEC	YES	T 40Y 40Y	SP568-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI	SUMMARY
1E12 F 0052B	RESIDUAL HEAT REMOVAL SYSTEM MAIN STM TO RHR HX ISO 52102	MOTOR OPERATOR	LIMITORQUE SMB-2-40	AB-4 HARSH AXC/04-620	A	A3	J	YES	N/A 70.0 SEC	YES	T 40Y 40Y	SP568-000-01
1E12 F 0053A	RESIDUAL HEAT REMOVAL SYSTEM RHR TO FW ISO MAX P330PSI 52102	MOTOR OPERATOR	LIMITORQUE SMB-3-60	AB-4 HARSH AXC/06-620	A	A1	J	YES	N/A 34.0 SEC	YES	T 40Y 40Y	SP568-000-01
1E12 F 0053B	RESIDUAL HEAT REMOVAL SYSTEM RHR TO FW ISO MAX P330PSI 52102	MOTOR OPERATOR	LIMITORQUE SMB-3-60	AB-4 HARSH AXC/04-620	A	A1	J	YES	N/A 34.0 SEC	YES	T 40Y 40Y	SP568-000-01
1E12 F 0064A	RESIDUAL HEAT REMOVAL SYSTEM RHR MIN FLW TO SUPP POOL ISO 52102	MOTOR OPERATOR	LIMITORQUE SB-00-10	AB-4 HARSH AXC/07-574	A	A1	J	YES	N/A 8.00 SEC	YES	T 40Y 40Y	SP568-000-01
1E12 F 0064B	RESIDUAL HEAT REMOVAL SYSTEM RHR MIN FLW TO SUPP POOL ISO 52102	MOTOR OPERATOR	LIMITORQUE SB-00-10	AB-4 HARSH AXC/03-574	A	A1	J	YES	N/A 8.00 SEC	YES	T 40Y 40Y	SP568-000-01
1E12 F 0064C	RESIDUAL HEAT REMOVAL SYSTEM RHR MIN FLW TO SUPP POOL ISO 52102	MOTOR OPERATOR	LIMITORQUE SB-00-10	AB-4 HARSH AXC/05-574	A	A1	J	YES	N/A 8.00 SEC	YES	T 40Y 40Y	SP568-000-01
1E12 F 0073A	RESIDUAL HEAT REMOVAL SYSTEM RHR HX SHELL SIDE VENTS TO POOL 53106	MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-5 HARSH AXB/06-620	A	A3	H	YES	N/A N/A	YES	T 40Y 40Y	SP568-000-01
1E12 F 0073B	RESIDUAL HEAT REMOVAL SYSTEM RHR HX SHELL SIDE VENTS TO POOL 53106	MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-4 HARSH AXB/04-620	A	A3	H	YES	N/A N/A	YES	T 40Y 40Y	SP568-000-01
1E12 F 0074A	RESIDUAL HEAT REMOVAL SYSTEM RHR HX SHELL SIDE VENTS TO POOL 53106	MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-4 HARSH AXB/06-620	A	A3	J	YES	N/A N/A	YES	T 40Y 40Y	SP568-000-01
1E12 F 0074B	RESIDUAL HEAT REMOVAL SYSTEM RHR HX SHELL SIDE VENTS TO POOL 53106	MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-4 HARSH AXB/04-620	A	A3	J	YES	N/A N/A	YES	T 40Y 40Y	SP568-000-01
1E12 F 0087A	RESIDUAL HEAT REMOVAL SYSTEM BYPASS FOR F051A 52102	MOTOR OPERATOR	LIMITORQUE SMB-1-25	AB-4 HARSH AXB/06-620	A	A3	J	YES	N/A 48.0 SEC	YES	T 40Y 40Y	SP568-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER / MODEL	ZONE / LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1E12 F 0087B	RESIDUAL HEAT REMOVAL SYSTEM		LIMITORQUE	AB-4	A	A3	J	YES	N/A		YES	T	40Y	SP568-000-01
	BYPASS FOR F051B		SMB-1-25	HARSH					48.0	SEC			40Y	
	52102	MOTOR OPERATOR		AXB/04-620										
1E12 F 0105	RESIDUAL HEAT REMOVAL SYSTEM		LIMITORQUE	AB-4	A	A1	J	YES	N/A		YES	T	40Y	SP568-000-01
	SUPPRESSION POOL SUCTION ISO		SMB-1-25	HARSH					117.	SEC			40Y	
	52102	MOTOR OPERATOR		AXC/04-574										
1E12 F 0537A	RESIDUAL HEAT REMOVAL SYSTEM		LIMITORQUE	CT-1	A	A1	H	YES	N/A		YES	T	40Y	SP568-000-01
	CONTAINMENT SPRAY 2ND ISO		SMB-1-25	HARSH					60.0	SEC			40Y	
	52102	MOTOR OPERATOR		C 0/01-689					H2	LATER				
1E12 F 0537B	RESIDUAL HEAT REMOVAL SYSTEM		LIMITORQUE	CT-1	A	A1	H	YES	N/A		YES	T	40Y	SP568-000-01
	CONTAINMENT SPRAY 2ND ISO		SMB-1-25	HARSH					60.0	SEC			40Y	
	52102	MOTOR OPERATOR		C 0/17-689					H2	LATER				
1E21 F 0001	LOW PRESSURE CORE SPRAY SYSTEM		LIMITORQUE	AB-2	A	A1	J	YES	N/A		YES	T	40Y	SP568-000-01
	PUMP SUCT FROM SUPP POOL 150		SMB-1-25	HARSH					117.	SEC			40Y	
	52102	MOTOR OPERATOR		AXD/08-574										
1E21 F 0005	LOW PRESSURE CORE SPRAY SYSTEM		LIMITORQUE	AB-4	A	A1	J	YES	N/A		YES	T	40Y	SP568-000-01
	LPCS TO RPV PEN P112 OUTBOARD		SMB-2-80	HARSH					25.9	SEC			40Y	
	52102	MOTOR OPERATOR		AXC/07-620										
1E21 F 0011	LOW PRESSURE CORE SPRAY SYSTEM		LIMITORQUE	AB-4	A	A1	J	YES	N/A		YES	T	40Y	SP568-000-01
	LPCS PMP MIN FLW TO SUPP POOL		SMB-000-5	HARSH					20.0	SEC			40Y	
	52102	MOTOR OPERATOR		AXC/07-599										
1E21 F 0012	LOW PRESSURE CORE SPRAY SYSTEM		LIMITORQUE	AB-4	A	A3	J	YES	N/A		YES	T	40Y	SP568-000-01
	LPCS TEST TO SUPP POOL		SMB-2-40	HARSH					62.0	SEC			40Y	
	52102	MOTOR OPERATOR		AXC/07-599										
1 1E22 F 0001	HIGH PRESSURE CORE SPRAY SYSTEM		LIMITORQUE	AB-2	A	A1	I	YES	N/A		YES	T	40Y	SP568-000-01
	CONDENSATE STORAGE SUCTION VALVE		SMB-00-15	HARSH					80.0	SEC			40Y	
	301 105D5007L	MOTOR OPERATOR		AXB/03-574										
1 1E22 F 0004	HIGH PRESSURE CORE SPRAY SYSTEM		LIMITORQUE	AB-8	A	A1	D	YES	N/A		YES	T	40Y	SP568-000-01
	HPCS PUMP INJECTION VALVE		SB-3-150	HARSH					12.0	SEC			40Y	
	301 105D5007L	MOTOR OPERATOR		AXD/02-620										
1 1E22 F 0010	HIGH PRESSURE CORE SPRAY SYSTEM		LIMITORQUE	AB-2	A	A1	C	YES	N/A		YES	T	40Y	SP568-000-01
	TEST BYPASS TO CONDENSATE STORAGE		SMB-4-200	HARSH					50.0	SEC			40Y	
	301 105D5007L	MOTOR OPERATOR		AXD/02-574										

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

AS OF 00633 03/22/84

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES TME H2/H2	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1 1E22 F 0011	HIGH PRESSURE CORE SPRAY SYSTEM TEST BYPASS TO CONDENSATE STORAGE 301 105D5007L MOTOR OPERATOR	LIMITORQUE SMB-4-200	AB-2 HARSH AXD/02-574	A	A1	C	YES	N/A 50.0 SEC	YES	T	40Y 40Y	SP568-000-01
1 1E22 F 0012	HIGH PRESSURE CORE SPRAY SYSTEM MIN FLOW BYPASS TO SUPPRESSION POOL 301 105D5007L MOTOR OPERATOR	LIMITORQUE SB-0-25	AB-8 HARSH AXD/03-620	A	A1	D	YES	N/A 5.00 SEC	YES	T	40Y 40Y	SP568-000-01
1 1E22 F 0015	HIGH PRESSURE CORE SPRAY SYSTEM SUPPRESSION POOL SUCTION VALVE 301 105D5007L MOTOR OPERATOR	LIMITORQUE SB-1-40	AB-2 HARSH AXD/02-574	A	A1	D	YES	N/A 24.0 SEC	YES	T	40Y 40Y	SP568-000-01
1 1E22 F 0023	HIGH PRESSURE CORE SPRAY SYSTEM HPCS TEST TO SUPP POOL 301 105D5007L MOTOR OPERATOR	LIMITORQUE SMB-4-150	AB-8 HARSH AXE/02-620	A	A1	D	YES	N/A 60.0 SEC	YES	T	40Y 40Y	SP568-000-01
1E32 F 0001A	MSIV LEAKAGE CONTROL SYSTEM STEAM TUNNEL ISOLATION VLV 52103 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-7 HARSH AXC/06-624	A	A1	J	YES	N/A 15.0 SEC	YES	T	40Y 40Y	SP568-000-01
1E32 F 0001E	MSIV LEAKAGE CONTROL SYSTEM STEAM TUNNEL ISOLATION VLV 52103 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-7 HARSH AXC/04-624	A	A1	J	YES	N/A 15.0 SEC	YES	T	40Y 40Y	SP568-000-01
1E32 F 0001J	MSIV LEAKAGE CONTROL SYSTEM STEAM TUNNEL ISOLATION VLV 52103 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-7 HARSH AXC/06-624	A	A1	J	YES	N/A 15.0 SEC	YES	T	40Y 40Y	SP568-000-01
1E32 F 0001N	MSIV LEAKAGE CONTROL SYSTEM STEAM TUNNEL ISOLATION VLV 52103 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-7 HARSH AXC/05-624	A	A1	J	YES	N/A 15.0 SEC	YES	T	40Y 40Y	SP568-000-01
1E32 F 0002A	MSIV LEAKAGE CONTROL SYSTEM STEAM TUNNEL ISOLATION VLV 52103 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-7 HARSH AXC/06-624	A	A1	J	YES	N/A 15.0 SEC	YES	T	40Y 40Y	SP568-000-01
1E32 F 0002E	MSIV LEAKAGE CONTROL SYSTEM STEAM TUNNEL ISOLATION VLV 52103 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-7 HARSH AXC/04-624	A	A1	J	YES	N/A 15.0 SEC	YES	T	40Y 40Y	SP568-000-01
1E32 F 0002J	MSIV LEAKAGE CONTROL SYSTEM STEAM TUNNEL ISOLATION VLV 52103 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-7 HARSH AXC/06-624	A	A1	J	YES	N/A 15.0 SEC	YES	T	40Y 40Y	SP568-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 1OELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

AS OF 00636 03/22/84

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER / MODEL	ZONE / LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M LF/MI	QUALIFICATION SUMMARY
1E32 F 0002N	MSIV LEAKAGE CONTROL SYSTEM STEAM TUNNEL ISOLATION VLV 52103	MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-7 HARSH AXC/05-624	A	A1	J YES	N/A 15.0 SEC		YES	T 40Y 40Y	SP568-000-01
1E32 F 0003A	MSIV LEAKAGE CONTROL SYSTEM ANNULUS ISOLATION VLV 52103	MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-4 HARSH AXC/04-620	A	A1	C YES	N/A 15.0 SEC		YES	T 40Y 40Y	SP568-000-01
1E32 F 0003E	MSIV LEAKAGE CONTROL SYSTEM ANNULUS ISOLATION VLV 52103	MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-4 HARSH AXC/04-620	A	A1	C YES	N/A 15.0 SEC		YES	T 40Y 40Y	SP568-000-01
1E32 F 0003J	MSIV LEAKAGE CONTROL SYSTEM ANNULUS ISOLATION VLV 52103	MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-4 HARSH AXC/04-620	A	A1	C YES	N/A 15.0 SEC		YES	T 40Y 40Y	SP568-000-01
1E32 F 0003N	MSIV LEAKAGE CONTROL SYSTEM ANNULUS ISOLATION VLV 52103	MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-4 HARSH AXC/04-620	A	A1	C YES	N/A 15.0 SEC		YES	T 40Y 40Y	SP568-000-01
1E32 F 0006	MSIV LEAKAGE CONTROL SYSTEM STEAM TUNNEL ISO VLV 53106	MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-7 HARSH AXB/04-624	A	A1	J YES	N/A 8.00 SEC		YES	T 40Y 40Y	SP568-000-01
1E32 F 0007	MSIV LEAKAGE CONTROL SYSTEM STEAM TUNNEL ISO VLV 53106	MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-7 HARSH AXB/04-624	A	A1	J YES	N/A 8.00 SEC		YES	T 40Y 40Y	SP568-000-01
1E32 F 0008	MSIV LEAKAGE CONTROL SYSTEM ANNULUS ISO VLV 52103	MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-7 HARSH AXC/03-620	A	A1	J YES	N/A 15.0 SEC		YES	T 40Y 40Y	SP568-000-01
1E32 F 0009	MSIV LEAKAGE CONTROL SYSTEM ANNULUS ISO VLV 52103	MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-7 HARSH AXC/03-620	A	A1	J YES	N/A 15.0 SEC		YES	T 40Y 40Y	SP568-000-01
1E51 F 0010	REACTOR CORE ISOLATION COOLING CST TO RCIC PMP ISO 52102	MOTOR OPERATOR	LIMITORQUE SMB-00-10	AB-3 HARSH AXB/05-574	A	A3	I YES	N/A 30.0 SEC		YES	T 40Y 40Y	SP568-000-01
1E51 F 0013	REACTOR CORE ISOLATION COOLING P123 OUTBRD ISO MAX AP 1400PSI 52102	MOTOR OPERATOR	LIMITORQUE SMB-1-40	AB-4 HARSH AXC/06-620	A	A3	E YES	N/A 15.0 SEC		YES	T 40Y 40Y	SP568-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

AS OF 00636 03/22/84

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES TME H2/H2 DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1E51 F 0019	REACTOR CORE ISOLATION COOL. SYSTEM RCIC MIN FLOW TO SUPP POOL 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-4 HARSH AXC/06-599	A	A3	E	YES	N/A 5.00 SEC	YES	T 40Y 40Y	SP568-000-01
1E51 F 0022	REACTOR CORE ISOLATION COOLING RCIC TO CST ISO 52102 MOTOR OPERATOR	LIMITORQUE SMB-0-25	AB-3 HARSH AXC/05-574	A	A3	I	YES	N/A 15.0 SEC	YES	T 40Y 40Y	SP568-000-01
1E51 F 0031	REACTOR CORE ISOLATION COOLING SUPP POOL SUCT ISO FOR RCIC PM 52102 MOTOR OPERATOR	LIMITORQUE SMB-00-10	AB-3 HARSH AXC/06-574	A	A3	E	YES	N/A 37.5 SEC	YES	T 40Y 40Y	SP568-000-01
1E51 F 0045	REACTOR CORE ISOLATION COOLING MS TO RCIC TURB, MAX P#1145PSI 52102 MOTOR OPERATOR	LIMITORQUE SMB-0-25	AB-3 HARSH AXC/05-574	A	A3	I	YES	N/A 15.0 SEC	YES	T 40Y 40Y	SP568-000-01
1E51 F 0046	REACTOR CORE ISOLATION COOL. SYSTEM RCIC PMP DISCH TO TURB LB OIL CLR. 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-3 HARSH AXC/06-574	A	A3	I	YES	N/A 5.00 SEC	YES	T 40Y 40Y	SP568-000-01
1E51 F 0059	REACTOR CORE ISOLATION COOLING RCIC TO CST ISO 52102 MOTOR OPERATOR	LIMITORQUE SMB-00-15	AB-4 HARSH AXC/05-574	A	A3	I	YES	N/A 15.0 SEC	YES	T 40Y 40Y	SP568-000-01
1E51 F 0063	REACTOR CORE ISOLATION COOLING P422 INBRD ISO,PNEU TEST MAX 52102 MOTOR OPERATOR	LIMITORQUE SMB-1-60	DW-1 HARSH C I/ -599	A	A1	E	YES	N/A 19.5 SEC H2 LATER	YES	T 40Y 40Y	SP568-000-01
1E51 F 0064	REACTOR CORE ISOLATION COOLING P422 OUTBRD ISO POSSW PNEU TST 52102 MOTOR OPERATOR	LIMITORQUE SB-1-60	AB-7 HARSH AXC/05-620	A	A1	E	YES	N/A 10.0 SEC	YES	T 40Y 40Y	SP568-000-01
1E51 F 0068	REACTOR CORE ISOLATION COOLING RCIC TURB EXH TO SUPP POOL ISO 52102 MOTOR OPERATOR	LIMITORQUE SMB-0-15	AB-4 HARSH AXC/06-599	A	A1	E	YES	N/A 66.0 SEC	YES	T 40Y 40Y	SP568-000-01
1E51 F 0076	REACTOR CORE ISOLATION COOL. SYSTEM BYPASS FOR F063 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	DW-1 HARSH C I/ -599	A	A1	E	YES	N/A N/A H2 LATER	YES	T 40Y 40Y	SP568-000-01
1E51 F 0077	REACTOR CORE ISOLATION COOL SYSTEM VACUUM RLF FOR RCIC TURB EXH 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-4 HARSH AXC/06-599	A	A3	E	YES	N/A 8.00 SEC	YES	T 40Y 40Y	SP568-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 1OELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES TME H2/H2 DEMO	ACC/RT DEMO	M	LF/MI	QUALIFICATION SUMMARY
1E51 F 0078	REACTOR CORE ISOLATION COOL. SYSTEM	LIMITORQUE	AB-4	A	A3	E	YES	N/A	YES	T	40Y	SP568-000-01
	VACUUM RLF FOR RCIC TURB EXH	SMB-000-2	HARSH					N/A			40Y	
	53106 MOTOR OPERATOR		AXC/06-599									
1 1E51 F 0510	REACTOR CORE ISOLATION COOLING	LIMITORQUE	AB-3	B	A3			N/A		C		SP301-S09-00
	RCIC TURB TRIP THROTTLE VALVE	SMB-000	HARSH					N/A				
	301 21A9526 OPERATOR-DC		AXB/06-574									
1G33 F 0001	REACTOR WATER CLEAN-UP SYSTEM	LIMITORQUE	DW-1	A	A1	B	YES	N/A	YES	T	40Y	SP568-000-01
	PEN P131 INBOARD ISO LRL,PNEU	SMB-00-15	HARSH					15.0 SEC			40Y	
	52102 MOTOR OPERATOR		C I/08-599									
1G33 F 0004	REACTOR WATER CLEAN-UP SYSTEM	LIMITORQUE	AB-7	A	A1	B	YES	N/A	YES	T	40Y	SP568-000-01
	PEN P131 OUTBOARD ISO PNEU	SMB-0-25	HARSH					15.0 SEC			40Y	
	52102 MOTOR OPERATOR		AXC/05-620									
1G33 F 0028	REACTOR WATER CLEAN-UP SYSTEM	LIMITORQUE	CT-6	A	A1	B	YES	N/A	YES	T	40Y	SP568-000-01
	PEN P424 INBOARD ISO	SMB-00-10	HARSH					15.0 SEC			40Y	
	52102 MOTOR OPERATOR		C 0/17-620									
1G33 F 0034	REACTOR WATER CLEAN-UP SYSTEM	LIMITORQUE	AB-7	A	A1	B	YES	N/A	YES	T	40Y	SP568-000-01
	PEN P424 OUTBOARD ISO	SMB-00-10	HARSH					15.0 SEC			40Y	
	52102 MOTOR OPERATOR		AXC/05-620									
1G33 F 0039	REACTOR WATER CLEAN-UP SYSTEM	LIMITORQUE	AB-7	A	A1	B	YES	N/A	YES	T	40Y	SP568-000-01
	PEN P132 OUTBOARD ISO	SMB-0-25	HARSH					15.0 SEC			40Y	
	52102 MOTOR OPERATOR		AXC/06-620									
1G33 F 0040	REACTOR WATER CLEAN-UP SYSTEM	LIMITORQUE	CT-6	A	A1	B	YES	N/A	YES	T	40Y	SP568-000-01
	PEN P132 INBOARD ISO	SMB-0-25	HARSH					15.0 SEC			40Y	
	52102 MOTOR OPERATOR		C 0/01-620									
1G33 F 0053	REACTOR WATER CLEAN-UP SYSTEM	LIMITORQUE	CT-6	A	A1	B	YES	N/A	YES	T	40Y	SP568-000-01
	PEN P419 INBOARD ISO	SMB-00-10	HARSH					15.0 SEC			40Y	
	52102 MOTOR OPERATOR		C 0/17-620									
1G33 F 0054	REACTOR WATER CLEAN-UP SYSTEM	LIMITORQUE	AB-7	A	A1	B	YES	N/A	YES	T	40Y	SP568-000-01
	PEN P419 OUTBOARD ISO	SMB-00-10	HARSH					15.0 SEC			40Y	
	52102 MOTOR OPERATOR		AXC/04-620									
1G41 F 0090	FUEL POOL COOLING & CLEAN-UP SYSTEM	LIMITORQUE	FB-3	A	A1	J	YES	N/A	YES	T	40Y	SP568-000-01
	CONTAINMENT POOL INFLUENT, FL	SMB-000-2/HOBC	HARSH					30.0 SEC			40Y	
	524 MOTOR OPERATOR		IBG/07-599									

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI	SUMMARY
1G41 F 0100	FUEL POOL COOLING & CLEAN-UP SYSTEM OUTBOARD CONTAINMENT ISOL. VAL 524 MOTOR OPERATOR	LIMITORQUE SMB-000-2/HOBC	FB-2 MILD IBF/08-620	A	A4	A	YES	N/A 30.0 SEC	YES	T 40Y 40Y	SP568-000-01
1G41 F 0140	FUEL POOL COOLING & CLEAN-UP SYSTEM INBOARD CONTAINMENT ISOL. EFFL 524 MOTOR OPERATOR	LIMITORQUE SMB-000-2/HOBC	CT-3 HARSH C 0/12-620	A	A1	A	YES	N/A 30.0 SEC	YES	T 40Y 40Y	SP568-000-01
1G41 F 0145	FUEL POOL COOLING & CLEAN-UP SYSTEM OUTBOARD CONTAINMENT ISOL. VLV 524 MOTOR OPERATOR	LIMITORQUE SMB-000-2/HOBC	FB-5 MILD IBD/05-620	A	A4	A	YES	30.0 SEC	YES	T 40Y 40Y	SP568-000-01
1G42 F 0010	SUPPRESSION POOL DRAIN & CLEAN-UP SPCU. PUMP SUCT. ISOL 524 MOTOR OPERATOR	LIMITORQUE SMB-000-2/HOBC	AB-2 HARSH AXC/02-574	A	A1	J	YES	N/A 30.0 SEC	YES	T 40Y 40Y	SP568-000-01
1G42 F 0020	SUPPRESSION POOL DRAIN & CLEAN-UP SPCU. PUMP SUCT. ISOL 524 MOTOR OPERATOR	LIMITORQUE SMB-000-2/HOBC	AB-2 HARSH AXC/02-574	A	A1	J	YES	N/A 30.0 SEC	YES	T 40Y 40Y	SP568-000-01
1G42 F 0080	SUPPRESSION POOL DRAIN & CLEAN-UP RETURN FROM SUPP POOL DEMIN 524 MOTOR OPERATOR	LIMITORQUE SMB-000-2/HOBC	FB-1 MILD IBJ/02-599	A	A4	J	YES	N/A 30.0 SEC	YES	T 40Y 40Y	SP568-000-01
1G43 F 0030A	SUPPRESSION POOL MAKE-UP SYSTEM SUPPRESSION POOL MAKEUP 524 MOTOR OPERATOR	LIMITORQUE SMB-00-10/H3BC	CT-8 HARSH C 0/ -664	A	A1	C	YES	N/A 30.0 SEC	YES	T 40Y 40Y	SP568-000-01
1G43 F 0030B	SUPPRESSION POOL MAKE-UP SYSTEM SUPPRESSION POOL MAKEUP 524 MOTOR OPERATOR	LIMITORQUE SMB-00-10/H3BC	CT-7 HARSH C 0/17-664	A	A1	C	YES	N/A 30.0 SEC	YES	T 40Y 40Y	SP568-000-01
1G43 F 0040A	SUPPRESSION POOL MAKE-UP SYSTEM SUPPRESSION POOL MAKEUP 524 MOTOR OPERATOR	LIMITORQUE SMB-00-10/H3BC	CT-8 HARSH C 0/ -664	A	A1	C	YES	N/A 30.0 SEC	YES	T 40Y 40Y	SP568-000-01
1G43 F 0040B	SUPPRESSION POOL MAKE-UP SYSTEM SUPPRESSION POOL MAKEUP 524 MOTOR OPERATOR	LIMITORQUE SMB-00-10/H3BC	CT-7 HARSH C 0/16-642	A	A1	C	YES	N/A 30.0 SEC	YES	T 40Y 40Y	SP568-000-01
1G50 F 0272	LIQUID RADWASTE SYSTEM CONTAINMENT ISOL. RBTP DISCH. 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	CT-6 HARSH C 0/00-620	A	A1	A	YES	N/A 20.0 SEC	YES	T 40Y 40Y	SP568-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

AS OF 00636 03/22/84

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT ELEV	EC	FT	OPER DEMO SEAL	ACC RES TME H2/H2 DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1G50 F 0277	LIQUID RADWASTE SYSTEM CONTAINMENT ISOL. RBTP. DISCH. 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-7 HARSH AXC/04-620	A	A1	A	YES	N/A 20.0 SEC	YES	T	40Y 40Y	SP568-000-01
1G61 F 0030	LIQUID RADWASTE SUMPS SYSTEM DRYWELL ISOL.-OUTSIDE DRYWELL 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	CT-2 HARSH C 0/00-599	A	A1	C	YES	N/A 16.5 SEC	YES	T	40Y 40Y	SP568-000-01
1G61 F 0035	LIQUID RADWASTE SUMPS SYSTEM DRYWELL ISOL.-OUTSIDE DRYWELL 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	CT-2 HARSH C 0/00-599	A	A1	C	YES	N/A 16.5 SEC	YES	T	40Y 40Y	SP568-000-01
1G61 F 0075	LIQUID RADWASTE SUMPS SYSTEM CONTAINMENT ISOL.-INSIDE CONTA 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	CT-2 HARSH C 0/00-599	A	A1	C	YES	N/A 22.0 SEC	YES	T	40Y 40Y	SP568-000-01
1G61 F 0080	LIQUID RADWASTE SUMPS SYSTEM CONTAINMENT ISOL.OUTSIDE CONT. 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-4 HARSH AXD/04-620	A	A1	C	YES	N/A 22.0 SEC	YES	T	40Y 40Y	SP568-000-01
1G61 F 0150	LIQUID RADWASTE SUMPS SYSTEM DRYWELL ISOL.-OUTSIDE DRYWELL 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	CT-2 HARSH C 0/17-599	A	A1	C	YES	N/A 16.5 SEC	YES	T	40Y 40Y	SP568-000-01
1G61 F 0155	LIQUID RADWASTE SUMPS SYSTEM DRYWELL ISOL.-OUTSIDE DRYWELL 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	CT-2 HARSH C 0/17-599	A	A1	C	YES	N/A 16.5 SEC	YES	T	40Y 40Y	SP568-000-01
1G61 F 0165	LIQUID RADWASTE SUMPS SYSTEM CONT. ISOL.- INSIDE CONT. 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	CT-2 HARSH C 0/17-599	A	A1	C	YES	N/A 22.0 SEC	YES	T	40Y 40Y	SP568-000-01
1G61 F 0170	LIQUID RADWASTE SUMPS SYSTEM CONT. ISOL.-OUTSIDE CONT. 52102 MOTOR OPERATOR	LIMITORQUE SMB-000-5	AB-4 HARSH AXD/04-620	A	A1	C	YES	N/A 22.0 SEC	YES	T	40Y 40Y	SP568-000-01
1M16 F 0010A	DRYWELL VACUUM RELIEF SYSTEM DRYWELL ISOL. 641 DW VAC RLF TRAIN A	LIMITORQUE SMB0002/HOBC VAC RLF ISOL MOV	CT-7 HARSH C 0/17-652	A	A1	J	YES	N/A 05.0 SEC H2 LATER	YES	C	40Y 40Y	SP568-000-01
1M16 F 0010B	DRYWELL VACUUM RELIEF SYSTEM DRYWELL ISOL. 641 DW VAC RLF TRAIN B	LIMITORQUE SMB0002/HOBC VAC RLF ISOL MOV	CT-7 HARSH C 0/12-652	A	A1	J	YES	N/A 05.0 SEC H2 LATER	YES	C	40Y 40Y	SP568-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 10ELIMITORQUE AS OF 00636 03/22/84
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD ELEV	EC CAT	FT	OPER DEMO SEAL	ACC RES H2/H2 DEMO	ACC/RT TME DEMO	QUALIFICATION M LF/MI	SUMMARY
1M17 F 0015	CONTAINMENT VACUUM RELIEF SYSTEM CONTAINMENT VAC. RELIEF 641 MOTOR OPERATOR	LIMITORQUE SMB-00-15/H3BC	CT-0 HARSH C 0/02-689	A	A1	J	YES	N/A 05.0 SEC	YES	C 40Y 40Y	SP568-000-01
1M17 F 0025	CONTAINMENT VACUUM RELIEF SYSTEM CONTAINMENT VAC. RELIEF 641 MOTOR OPERATOR	LIMITORQUE SMB-00-15/H3BC	CT-0 HARSH C 0/07-689	A	A1	J	YES	N/A 05.0 SEC	YES	C 40Y 40Y	SP568-000-01
1M17 F 0035	CONTAINMENT VACUUM RELIEF SYSTEM CONTAINMENT VAC RELIEF ISOL 641 MOTOR OPERATOR	LIMITORQUE SMB-00-15/H3BC	CT-0 HARSH C 0/16-689	A	A1	J	YES	N/A 05.0 SEC	YES	C 40Y 40Y	SP568-000-01
1M17 F 0045	CONTAINMENT VACUUM RELIEF SYSTEM CONTAINMENT VAC. RELIEF ISOL. 641 MOTOR OPERATOR	LIMITORQUE SMB-00-15/H3BC	CT-0 HARSH C 0/17-689	A	A1	J	YES	N/A 05.0 SEC	YES	C 40Y 40Y	SP568-000-01
1M51 F 0010A	COMBUSTIBLE GAS CONTROL SYSTEM COMBUSTIBLE GAS PURGING UNIT, 52102 MOTOR OPERATOR	LIMITORQUE SMB-00-5	CT-7 HARSH C 0/16-670	A	A1	F	YES	N/A 32.7 SEC H2 LATER	YES	T 40Y 40Y	SP568-000-01
1M51 F 0010B	COMBUSTIBLE GAS CONTROL SYSTEM COMBUSTIBLE GAS PURGING UNIT D 52102 MOTOR OPERATOR	LIMITORQUE SMB-00-5	CT-4 HARSH C 0/13-670	A	A1	F	YES	N/A 32.7 SEC H2 LATER	YES	T 40Y 40Y	SP568-000-01
1M51 F 0020A	COMBUSTIBLE GAS CONTROL SYSTEM COMP. COOLING WTR. SUPPLY 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	CT-4 HARSH C 0/15-670	A	A1	F	YES	N/A N/A H2 LATER	YES	T 40Y 40Y	SP568-000-01
1M51 F 0020B	COMBUSTIBLE GAS CONTROL SYSTEM COMP. COOLING WTR. SUPPLY 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	CT-4 HARSH C 0/13-670	A	A1	F	YES	N/A N/A H2 LATER	YES	T 40Y 40Y	SP568-000-01
1M51 F 0090	COMBUSTIBLE GAS CONTROL SYSTEM BACKUP H2 PURGE INSIDE CONTAIN 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	CT-3 HARSH C 0/12-620	A	A1	A	YES	N/A N/A	YES	T 40Y 40Y	SP568-000-01
1M51 F 0110	COMBUSTIBLE GAS CONTROL SYSTEM BACKUP H2 PURGE OUTSIDE CONTAIN 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	FB-5 MILD IBD/05-624	A	A4	A	YES	N/A N/A	YES	T 40Y 40Y	SP568-000-01
1N11 F 0020A	MAIN AND REHEAT STEAM SYSTEM MAIN STEAM STOP 3RD ISO 52102 MOTOR OPERATOR	LIMITORQUE SMB-4-100	AB-7 HARSH SM / -620	A	A1	B	YES	N/A 140. SEC	YES	T 40Y 40Y	SP568-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

AS OF 00636 03/22/84

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1N11 F 0020B	MAIN AND REHEAT STEAM SYSTEM		LIMITORQUE	AB-7	A	A1	B	YES	N/A		YES	T	40Y	SP568-000-01
	MAIN STEAM STOP 3RD ISO		SMB-4-100	HARSH						140. SEC			40Y	
	52102	MOTOR OPERATOR		SM / -620										
1N11 F 0020C	MAIN AND REHEAT STEAM SYSTEM		LIMITORQUE	AB-7	A	A1	B	YES	N/A		YES	T	40Y	SP568-000-01
	MAIN STEAM STOP 3RD ISO		SMB-4-100	HARSH						140. SEC			40Y	
	52102	MOTOR OPERATOR		SM / -620										
1N11 F 0020D	MAIN AND REHEAT STEAM SYSTEM		LIMITORQUE	AB-7	A	A1	B	YES	N/A		YES	T	40Y	SP568-000-01
	MAIN STEAM STOP 3RD ISO		SMB-4-100	HARSH						140. SEC			40Y	
	52102	MOTOR OPERATOR		SM / -620										
1N27 F 0737	FEEDWATER SYSTEM		LIMITORQUE	AB-7	A	A1	J	YES	N/A		YES	T	40Y	SP568-000-01
	INBOARD FW-LCS ISOL. VALVE		SMB-000-2	HARSH					N/A				40Y	
	53106	MOTOR OPERATOR		AXB/04-620										
1N27 F 0740	FEEDWATER SYSTEM		LIMITORQUE	AB-7	A	A1	J	YES	N/A		YES	T	40Y	SP568-000-01
	OUTBOARD FW-LCS ISOL. VALVE		SMB-000-2	HARSH					N/A				40Y	
	53106	MOTOR OPERATOR		AXB/06-620										
1P11 F 0060	CONDENSATE TRANSFER & STORAGE SYSTEM		LIMITORQUE	AB-9	A	A1	A	YES	N/A		YES	T	40Y	SP568-000-01
	OUTBOARD CONTAINMENT ISOL.		SMB-000-2/HOBC	HARSH						30.0 SEC			40Y	
	524	MOTOR OPERATOR		AXE/08-599										
1P11 F 0080	CONDENSATE TRANSFER & STORAGE SYSTEM		LIMITORQUE	AB-9	A	A1	A	YES	N/A		YES	T	40Y	SP568-000-01
	CONTAINMENT POOL DR. LINE.OUTB		SMB-000-2/HOBC	HARSH						30.0 SEC			40Y	
	524	MOTOR OPERATOR		AXE/08-599										
1P11 F 0090	CONDENSATE TRANSFER & STORAGE SYSTEM		LIMITORQUE	CT-2	A	A1	A	YES	N/A		YES	T	40Y	SP568-000-01
	CONTAINMENT POOL DR. LINE,INBO		SMB-000-2/HOBC	HARSH						30.0 SEC			40Y	
	524	MOTOR OPERATOR		C 0/03-605										
1P22 F 0010	MIXED BED DEMIN AND DISTRIBUTION		LIMITORQUE	FB-1	A	A4	J	YES	N/A		YES	T	40Y	SP568-000-01
	CNT. ISO. PEN P309		SMB-000-5	MILD						22.0 SEC			40Y	
	52102	MOTOR OPERATOR		IBN/03-599										
1P22 F 0015	MIXED BED DEMIN AND DISTRIBUTION		LIMITORQUE	CT-3	A	A1	C	YES	N/A		YES	T	40Y	SP568-000-01
	DW. ISO. PRB 3050		SMB-000-2	HARSH					N/A				40Y	
	53101	MOTOR OPERATOR		C 0/09-620										
1P43 F 0055	NUCLEAR CLOSED COOLING SYSTEM		LIMITORQUE	FB-1	A	A4	A	YES	N/A		YES	T	40Y	SP568-000-01
	OUTBOARD CNT. ISOL.INFLUENT		SMB-000-2/HOBC	MILD						30.0 SEC			40Y	
	524	MOTOR OPERATOR		IBB/02-599										

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

AS OF 00636 03/22/84

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1P43 F 0140	NUCLEAR CLOSED COOLING SYSTEM		LIMITORQUE	FB-1	A	A4	A	YES	N/A		YES	T	40Y	SP568-000-01
	OUTBOARD CNT. ISOL. EFFLUENT		SMB-000-2/HOBC	MILD					30.0	SEC			40Y	
	524	MOTOR OPERATOR		IBB/02-599										
1P43 F 0215	NUCLEAR CLOSED COOLING SYSTEM		LIMITORQUE	CT-2	A	A1	A	YES	N/A		YES	T	40Y	SP568-000-01
	INBOARD CNT. ISOL EFFLUENT		SMB-000-2/HOBC	HARSH					30.0	SEC			40Y	
	524	MOTOR OPERATOR		C 0/14-605										
1P43 F 0355	NUCLEAR CLOSED COOLING SYSTEM		LIMITORQUE	CT-2	A	A1	A	YES	N/A		YES	T	40Y	SP568-000-01
	OUTBOARD DRYWELL ISOL. INFLUEN		SMB-000-2/HOBC	HARSH					10.0	SEC			40Y	
	524	MOTOR OPERATOR		C 0/16-605										
1P43 F 0400	NUCLEAR CLOSED COOLING SYSTEM		LIMITORQUE	CT-2	A	A1	A	YES	N/A		YES	T	40Y	SP568-000-01
	DRYWELL ISOL. EFFLUENT		SMB-000-2/HOBC	HARSH					10.0	SEC			40Y	
	524	MOTOR OPERATOR		C 0/14-605										
1P43 F 0410	NUCLEAR CLOSED COOLING SYSTEM		LIMITORQUE	CT-2	A	A1	A	YES	N/A		YES	T	40Y	SP568-000-01
	DRYWELL ISOL. EFFLUENT		SMB-000-2/HOBC	HARSH					10.0	SEC			40Y	
	524	MOTOR OPERATOR		C 0/15-605										
1P45 F 0014A	EMERGENCY SERVICE WATER SYSTEM		LIMITORQUE	AB-4	A	A1	J	YES	N/A		YES	T	40Y	SP568-000-01
	RHR HEAT EXCH ISO.		SMB-000-5/H2BC	HARSH					30.0	SEC			40Y	
	524	MOTOR OPERATOR		AXB/07-593										
1P45 F 0014B	EMERGENCY SERVICE WATER SYSTEM		LIMITORQUE	AB-4	A	A1	J	YES	N/A		YES	T	40Y	SP568-000-01
	RHR HEAT EXCH ISO.		SMB-000-5/H2BC	HARSH					30.0	SEC			40Y	
	524	MOTOR OPERATOR		AXC/03-574										
1P45 F 0068A	EMERGENCY SERVICE WATER SYSTEM		LIMITORQUE	AB-4	A	A1	J	YES	N/A		YES	T	40Y	SP568-000-01
	RHR HEAT EXCH ISO.		SMB-000-5/H2BC	HARSH					30.0	SEC			40Y	
	524	MOTOR OPERATOR		AXB/06-574										
1P45 F 0068B	EMERGENCY SERVICE WATER SYSTEM		LIMITORQUE	AB-4	A	A1	J	YES	N/A		YES	T	40Y	SP568-000-01
	RHR HEAT EXCH ISO.		SMB-000-5/H2BC	HARSH					30.0	SEC			40Y	
	524	MOTOR OPERATOR		AXC/04-574										
1P45 F 0130A	EMERGENCY SERVICE WATER SYSTEM		LIMITORQUE	ES-W	A	A4	J	YES	N/A		YES	T	40Y	SP568-000-01
	EM. SERVICE WTR. PUMP ISOL.		SMB-00-10/H3BC	MILD					30.0	SEC			40Y	
	524	MOTOR OPERATOR		EWD/05-586										
1P45 F 0130B	EMERGENCY SERVICE WATER SYSTEM		LIMITORQUE	ES-W	A	A4	J	YES	N/A		YES	T	40Y	SP568-000-01
	EM. SERVICE WTR. PUMP ISOL.		SMB-00-10/H3BC	MILD					30.0	SEC			40Y	
	524	MOTOR OPERATOR		EWD/03-586										

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 10ELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

AS OF 00636 03/22/'84

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER / MODEL / DESCRIPTION	ZONE / LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1P45 F 0140	EMERGENCY SERVICE WATER SYSTEM		LIMITORQUE	ES-W	A	A4	J	YES	N/A		YES	T	40Y	SP568-000-01
	EM. SERVICE WTR. PUMP ISOL.		SMB-000-5/HOBC	MILD						30.0 SEC			40Y	
	524	MOTOR OPERATOR		EWC/01-586										
1P50 F 0060	CONTAINMENT VESSEL CHILLED WATER		LIMITORQUE	FB-1	A	A4	A	YES	N/A		YES	T	40Y	SP568-000-01
	OUTBOARD CONTAINMENT SUPPLY		SMB-000-2/HOBC	MILD						30.0 SEC			40Y	
	524	MOTOR OPERATOR		IBA/03-599										
1P50 F 0140	CONTAINMENT VESSEL CHILLED WATER		LIMITORQUE	CT-2	A	A1	A	YES	N/A		YES	T	40Y	SP568-000-01
	INBOARD CONTAINMENT RET. ISOL.		SMB-000-2/HOBC	HARSH						30.0 SEC			40Y	
	524	MOTOR OPERATOR		C 0/14-599										
1P50 F 0150	CONTAINMENT VESSEL CHILLED WATER		LIMITORQUE	FB-1	A	A4	A	YES	N/A		YES	T	40Y	SP568-000-01
	OUTBOARD CONTAINMENT RET. ISOL		SMB-000-2/HOBC	MILD						30.0 SEC			40Y	
	524	MOTOR OPERATOR		IBA/03-599										
1P51 F 0652	SERVICE AIR SYSTEM		LIMITORQUE	CT-3	A	A1	J	YES	N/A		YES	T	40Y	SP568-000-01
	DRYWELL ISOLATION		SMB-000-2	HARSH						8.00 SEC			40Y	
	53106	MOTOR OPERATOR		C 0/08-620					H2	LATER				
1P52 F 0200	INSTRUMENT AIR SYSTEM		LIMITORQUE	FB-1	A	A4	A	YES	N/A		YES	T	40Y	SP568-000-01
	OUTBOARD CONTAINMENT ISOLATION		SMB-000-2	MILD					N/A				40Y	
	53106	MOTOR OPERATOR		IBC/02-599										
1P52 F 0646	INSTRUMENT AIR SYSTEM		LIMITORQUE	CT-3	A	A1	J	YES	N/A		YES	T	40Y	SP568-000-01
	DRYWELL ISOLATION		SMB-000-2	HARSH					N/A				40Y	
	53106	MOTOR OPERATOR		C 0/07-599					H2	LATER				
1P54 F 0340	FIRE PROTECTION SYSTEM		LIMITORQUE	FB-2	A	A4	A	YES	N/A		YES	T	40Y	SP568-000-01
	CONTAINMENT ISOLATION		SMB-000-5	MILD						20.0 SEC			40Y	
	52102	MOTOR OPERATOR		IBC/08-620										
1P54 F 0395	FIRE PROTECTION SYSTEM		LIMITORQUE	CT-3	A	A1	A	YES	N/A		YES	T	40Y	SP568-000-01
	DRYWELL ISOLATION		SMB-000-5	HARSH						20.0 SEC			40Y	
	52102	MOTOR OPERATOR		C 0/06-620										
1P57 F 0015A	SAFETY RELATED INSTRUMENT AIR SYSTEM		LIMITORQUE	FB-1	A	A4	A	YES	N/A		YES	T	40Y	SP568-000-01
	CONTAINMENT ISOLATION		SMB-000-2	MILD					N/A				40Y	
	53106	MOTOR OPERATOR		IBE/04-599										
1P57 F 0015B	SAFETY RELATED INSTRUMENT AIR SYSTEM		LIMITORQUE	AB-1	A	A4	A	YES	N/A		YES	T	40Y	SP568-000-01
	CONTAINMENT ISOLATION		SMB-000-2	MILD					N/A				40Y	
	53106	MOTOR OPERATOR		AXD/08-620										

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 1OELIMITORQUE
SELECT : 42E1
SORT : 01
TITLE : EQRL SP568-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT SEAL	OPER DEMO	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1P57 F 0020A	SAFETY RELATED INSTRUMENT AIR SYSTEM CONTAINMENT ISOLATION 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	CT-3 HARSH C 0/16-620	A	A1	A	YES	N/A N/A		YES	T	40Y 40Y	SP568-000-01
1P57 F 0020B	SAFETY RELATED INSTRUMENT AIR SYSTEM CONTAINMENT ISOLATION 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	CT-3 HARSH C 0/03-620	A	A1	A	YES	N/A N/A		YES	T	40Y 40Y	SP568-000-01
1P86 F 0002	NITROGEN SUPPLY SYSTEM OUTBD. TEST ISO. PEN 117 PNEU 53106 MOTOR OPERATOR	LIMITORQUE SMB-000-2	AB-1 MILD AXE/08-624	A	A4	A	YES	N/A 8.00 SEC		YES	T	40Y 40Y	SP568-000-01

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-02
MANUFACTURER'S QUALIFICATION REPORT NO. F-C4497-2 REV. Final Report
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Wire
MANUFACTURER/MODEL NO. GE/SP-57279
TESTED DEVICE MODEL NO. SP-57279

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON. ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-4	132°F	8,408 Hours
AVERAGE	FB-4	103°F	338,440 Hours
MINIMUM	FB-4	60°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	FB-4	155/132°F	49 Hours
RADIATION DOSE (RADS, TID)	AB-9	8.8×10^2 Rads (2)	40 Hours

ACCELERATED AGING TEMP./TIMES 165°F/125 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.22×10^8 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Elect. Tested After Aging
FUNCTION TIME (FT)	J (180 Days)	Test Extended to 180 Days LOCA by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON. ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-9	217°F	346°F	129°F
PRESSURE (PSIG)	AB-9	1.6 PSIG	113 PSIG	111.4 PSIG
R.H. (%)	AB-9	100%	100%	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	AB-9	1×10^3 Rads	2×10^8 Rads (2)	>10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV. NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 3/16/84
CHECKED BY Eddie [illegible] 3-17-84
APPROVED BY [illegible] 3/15/84

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-02

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

TABLE I

MISCELLANEOUS PARTS AND MATERIALS LIST
FOR SPECIFICATION SP-594-4549-00
(MATERIALS OF CONSTRUCTION)

The items listed under Part A of this table are used in the equipment assemblies listed under Part B.

A. Items List

Item No.	Description	Manufacturer	Type No.
1.	Indicating Lamps	General Electric	ET-16
2.	Terminal Boards	General Electric	CR151B2
3.	Cable	General Electric	Vulkene Supreme SP-57279
4.	Terminal Lugs	Thomas & Betts	Sta-Kon RBT853
5.	Fuse Blocks	Buchanan	NQ0361
6.	Section Blocks	Buchanan	NQ0211
7.	BIW Wire	Boston	BOSTRAD XL
8.	Auxiliary Logic Relays	Agastat	7012

TABLE 1, Part A (continued)

Item No.	Description	Manufacturer	Type No.
9.	Auxiliary Logic Relays	General Electric	HMA111B
10.	Auxiliary Logic Relays	ITE-Gould	J10
11.	Control Switches	General Electric	CR2940Y
12.	Indicating Differential Pressure Switches	ITT Barton	580A-1
13.	Temperature Transmitters	Weed	4000
14.	Pressure Transmitters	Rosemount	1153

B. Equipment Assemblies List (Panels and Racks)

Panel/Rack MPL No.	Panel/Rack Description	Service Description System/Function	Location: Building - Elevation		Environmental Zone	Manufacturer & Mfr.Dwg.No./GAI Dwg.	Items Used Per Part A
OH51 P 0036A	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-056/B-201-142	1, 2, 3, 4, 11
OH51 P 0036B	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-155/B-201-142	1, 2, 3, 4, 11
OH51 P 0039	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-057/B-809-247	2, 3, 4, 14
OH51 P 0177A	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.1)	Control	679 ft.	CB-3 Mild	Comsip - Customline 44-055/B-809-076	1 thru 6, 8 thru 11
OH51 P 0177B	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.2)	Control	679 ft.	CB-3 Mild	Comsip - Customline 44-188/B-809-081	1 thru 11
OH51 P 0178	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-144/B-809-243	2, 3, 4, 14
OH51 P 0193	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "A"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-147/B-809-237	2, 3, 4, 12, 13
OH51 P 0194	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "C"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-146/B-809-238	2, 3, 4, 12, 13
OH51 P 0195	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "B"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-145/B-809-239	2, 3, 4, 12, 13
IH51 P 0037	Control Panel, Floor Mounted, Enclosed	Pump Room Cooling HVAC Control Panel	Auxiliary	599 ft.	AB-9 Harsh	Comsip - Customline 44-151/B-809-073	1 thru 6,8, 10,11
IH51 P 0134A	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "A"	Auxiliary	620 ft.	AB-1 Mild	Comsip - Customline 44-148/B-809-230	2, 3, 4, 14
IH51 P 0134B	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "B"	Intermediate	654 ft.	FB-4 Mild	Comsip - Customline 44-058/B-209-248	2, 3, 4, 14
IH51 P 0142	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.1)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-149/B-201-142	13
IH51 P 0143	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.2)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-154/B-201-142	13

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-03
MANUFACTURER'S QUALIFICATION REPORT NO. QPS-TB(CH)-878 REV. 1
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Terminal Lugs
MANUFACTURER/MODEL NO. Thomas & Betts/Sta-Kon RBT853
TESTED DEVICE MODEL NO. Insulated Sta-Kon Terminals

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-4	132°F	8,408 Hours
AVERAGE	FB-4	103°F	338,440 Hours
MINIMUM	FB-4	60°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	FB-4	155/132°F	49 Hours
RADIATION DOSE (RADS, TID)	AB-9	8.8×10^2 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 356°F/7 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2×10^8 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Functionally Checked After LOCA Test
FUNCTION TIME (FT)	J (180 Days)	30-Days LOCA Test Extrapolated to 180-Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-9	217°F	325°F	15°F
PRESSURE (PSIG)	AB-9	1.6 PSIG	105 PSIG	103.4 PSIG
R.H. (%)	AB-9	100%	≈100%	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	AB-9	1.0×10^3 Rads	1.999×10^8 Rads (2)	>10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 3/16/84
CHECKED BY Eddie B. Thomas Jr. 3-16-84
APPROVED BY M. A. Mathews 3/18/84

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-03

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

TABLE 1

MISCELLANEOUS PARTS AND MATERIALS LIST
FOR SPECIFICATION SP-594-4549-00
(MATERIALS OF CONSTRUCTION)

The items listed under Part A of this table are used in the equipment assemblies listed under Part B.

A. Items List

Item No.	Description	Manufacturer	Type No.
1.	Indicating Lamps	General Electric	ET-16
2.	Terminal Boards	General Electric	CR151B2
3.	Cable	General Electric	Vulkene Supreme SP-57279
4.	Terminal Lugs	Thomas & Betts	Sta-Kon RBT853
5.	Fuse Blocks	Buchanan	NQ0361
6.	Section Blocks	Buchanan	NQ0211
7.	BIW Wire	Boston	BOSTRAD XL
8.	Auxiliary Logic Relays	Agastat	7012

TABLE 1, Part A (continued)

Item No.	Description	Manufacturer	Type No.
9.	Auxiliary Logic Relays	General Electric	HMA111B
10.	Auxiliary Logic Relays	ITE-Gould	J10
11.	Control Switches	General Electric	CR2940Y
12.	Indicating Differential Pressure Switches	ITT Barton	580A-1
13.	Temperature Transmitters	Weed	4000
14.	Pressure Transmitters	Rosemount	1153

B. Equipment Assemblies List (Panels and Racks)

Panel/Rack MPL No.	Panel/Rack Description	Service Description System/Function	Location: Building - Elevation		Environmental Zone	Manufacturer & Mfr.Dwg.No./GAI Dwg.	Items Used Per Part A
OH51 P 0036A	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-056/B-201-142	1, 2, 3, 4, 11
OH51 P 0036B	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-155/B-201-142	1, 2, 3, 4, 11
OH51 P 0039	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-057/B-809-247	2, 3, 4, 14
OH51 P 0177A	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.1)	Control	679 ft.	CB-3 Mild	Comsip - Customline 44-055/B-809-076	1 thru 6, 8 thru 11
OH51 P 0177B	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.2)	Control	679 ft.	CB-3 Mild	Comsip - Customline 44-188/B-809-081	1 thru 11
OH51 P 0178	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-144/B-809-243	2, 3, 4, 14
OH51 P 0193	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "A"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-147/B-809-237	2, 3, 4, 12, 13
OH51 P 0194	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "C"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-146/B-809-238	2, 3, 4, 12, 13
OH51 P 0195	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "B"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-145/B-809-239	2, 3, 4, 12, 13
IH51 P 0037	Control Panel, Floor Mounted, Enclosed	Pump Room Cooling HVAC Control Panel	Auxiliary	599 ft.	AB-9 Harsh	Comsip - Customline 44-151/B-809-073	1 thru 6,8, 10,11
IH51 P 0134A	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "A"	Auxiliary	620 ft.	AB-1 Mild	Comsip - Customline 44-148/B-809-230	2, 3, 4, 14
IH51 P 0134B	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "B"	Intermediate	654 ft.	FB-4 Mild	Comsip - Customline 44-058/B-209-248	2, 3, 4, 14
IH51 P 0142	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.1)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-149/B-201-142	13
IH51 P 0143	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.2)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-154/B-201-142	13

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-04
MANUFACTURER'S QUALIFICATION REPORT NO. F-C5143 REV. 7/17/80
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Terminal & Fuse Blocks
MANUFACTURER/MODEL NO. Buchanan/NQ0211 & NQ0361
TESTED DEVICE MODEL NO. NQ0211 & NQ0361

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-9	107°F	8,408 Hours
AVERAGE	AB-9	93°F	338,440 Hours
MINIMUM	AB-9	86°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-9	126°F	49 Hours
RADIATION DOSE (RADS, TID)	AB-9	8.8×10^2 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 250°F/8.3 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2×10^8 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Yes, by functional test and monitoring of voltage and currents during test.
FUNCTION TIME (FT)	J (180 Days)	7-Days test in a steam pressure environment extrapolated to 180 days by analysis.
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-9	217°F	346°F	129°F
PRESSURE (PSIG)	AB-9	1.6 PSIG	113 PSIG	111.4 PSIG
R.H. (%)	AB-9	100%	100%	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	AB-9	1×10^3 Rads	1.9×10^8 Rads (2)	>10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 3/16/84
CHECKED BY Eddie B. Thomas Jr. 3-7-84
APPROVED BY W. A. Mathews 3/16/84

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-04

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

TABLE 1

MISCELLANEOUS PARTS AND MATERIALS LIST
FOR SPECIFICATION SP-594-4549-00
(MATERIALS OF CONSTRUCTION)

The items listed under Part A of this table are used in the equipment assemblies listed under Part B.

A. Items List

Item No.	Description	Manufacturer	Type No.
1.	Indicating Lamps	General Electric	ET-16
2.	Terminal Boards	General Electric	CR151B2
3.	Cable	General Electric	Vulkene Supreme SP-57279
4.	Terminal Lugs	Thomas & Betts	Sta-Kon RBT853
5.	Fuse Blocks	Buchanan	NQ0361
6.	Section Blocks	Buchanan	NQ0211
7.	BIW Wire	Boston	BOSTRAD XL
8.	Auxiliary Logic Relays	Agastat	7012

TABLE 1, Part A (continued)

Item No.	Description	Manufacturer	Type No.
9.	Auxiliary Logic Relays	General Electric	HMA111B
10.	Auxiliary Logic Relays	ITE-Gould	J10
11.	Control Switches	General Electric	CR2940Y
12.	Indicating Differential Pressure Switches	ITT Barton	580A-1
13.	Temperature Transmitters	Weed	4000
14.	Pressure Transmitters	Rosemount	1153

Table 1 (continued)

B. Equipment Assemblies List (Panels and Racks)

Panel/Rack MPL No.	Panel/Rack Description	Service Description System/Function	Location: Building - Elevation		Environmental Zone	Manufacturer & Mfr.Dwg.No./GAI Dwg.	Items Used Per Part A
OH51 P 0036A	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-056/B-201-142	1, 2, 3, 4, 11
OH51 P 0036B	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-155/B-201-142	1, 2, 3, 4, 11
OH51 P 0039	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-057/B-809-247	2, 3, 4, 14
OH51 P 0177A	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.1)	Control	679 ft.	CB-3 Mild	Comsip - Customline 44-055/B-809-076	1 thru 6, 8 thru 11
OH51 P 0177B	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.2)	Control	679 ft.	CB-3 Mild	Comsip - Customline 44-188/B-809-081	1 thru 11
OH51 P 0178	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-144/B-809-243	2, 3, 4, 14
OH51 P 0193	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "A"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-147/B-809-237	2, 3, 4, 12, 13
OH51 P 0194	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "C"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-146/B-809-238	2, 3, 4, 12, 13
OH51 P 0195	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "B"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-145/B-809-239	2, 3, 4, 12, 13
IH51 P 0037	Control Panel, Floor Mounted, Enclosed	Pump Room Cooling HVAC Control Panel	Auxiliary	599 ft.	AB-9 Harsh	Comsip - Customline 44-151/B-809-073	1 thru 6,8, 10,11
IH51 P 0134A	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "A"	Auxiliary	620 ft.	AB-1 Mild	Comsip - Customline 44-148/B-809-230	2, 3, 4, 14
IH51 P 0134B	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "B"	Intermediate	654 ft.	FB-4 Mild	Comsip - Customline 44-058/B-209-248	2, 3, 4, 14
IH51 P 0142	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.1)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-149/B-201-142	13
IH51 P 0143	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.2)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-154/B-201-142	13

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-06
MANUFACTURER'S QUALIFICATION REPORT NO. CR151B & 377-83-035 REV. 1
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Terminal Boards
MANUFACTURER/MODEL NO. GE/CR151B2
TESTED DEVICE MODEL NO. CR151B2

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-4	132°F	8,408 Hours
AVERAGE	FB-4	103°F	338,440 Hours
MINIMUM	FB-4	60°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	FB-4	155/132°F	49 Hours
RADIATION DOSE (RADS, TID)	AB-9	8.8×10^2 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 284°F/29 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT N/A
TEST RADIATION DOSE (TID) 1.5×10^7 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Insulation Check After Aging
FUNCTION TIME (FT)	J (180 Days)	Note 6
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-9	217°F	284°F	67°F
PRESSURE (PSIG)	AB-9	1.6 PSIG	0 PSIG	Note 5
R.H. (%)	AB-9	100%	Note 7	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	AB-9	1×10^3 Rads	1.4999×10^7 (2)	>10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/		/
/		/		/
/		/		/

REVIEWED BY C. J. Gosch / 3/16/84
CHECKED BY Eddie B. Thomas / 3-19-84
APPROVED BY [illegible] / 3/20/84

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-06

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Not applicable to failure mode.

6. Aging test has enough margin to envelope the 180 days LOCA by analysis.

7. Equipment is installed in a NEMA 12 enclosure and will not be exposed to the high humidity condition existing outside the enclosure which exists for 30 seconds.

TABLE 1

MISCELLANEOUS PARTS AND MATERIALS LIST
FOR SPECIFICATION SP-594-4549-00
(MATERIALS OF CONSTRUCTION)

The items listed under Part A of this table are used in the equipment assemblies listed under Part B.

A. Items List

Item No.	Description	Manufacturer	Type No.
1.	Indicating Lamps	General Electric	ET-16
2.	Terminal Boards	General Electric	CR151B2
3.	Cable	General Electric	Vulkene Supreme SP-57279
4.	Terminal Lugs	Thomas & Betts	Sta-Kon RBT853
5.	Fuse Blocks	Buchanan	NQ0361
6.	Section Blocks	Buchanan	NQ0211
7.	BIW Wire	Boston	BOSTRAD XL
8.	Auxiliary Logic Relays	Agastat	7012

TABLE 1, Part A (continued)

Item No.	Description	Manufacturer	Type No.
9.	Auxiliary Logic Relays	General Electric	HMA111B
10.	Auxiliary Logic Relays	ITE-Gould	J10
11.	Control Switches	General Electric	CR2940Y
12.	Indicating Differential Pressure Switches	ITT Barton	580A-1
13.	Temperature Transmitters	Weed	4000
14.	Pressure Transmitters	Rosemount	1153

Table 1 (continued)

B. Equipment Assemblies List (Panels and Racks)

Panel/Rack ID No.	Panel/Rack Description	Service Description System/Function	Location: Building - Elevation		Environmental Zone	Manufacturer & Mfr.Dwg.No./GAI Dwg.	Items Used Per Part A
OH51 P 0036A	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-056/B-201-142	1, 2, 3, 4, 11
OH51 P 0036B	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-155/B-201-142	1, 2, 3, 4, 11
OH51 P 0039	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-057/B-809-247	2, 3, 4, 14
OH51 P 0177A	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.1)	Control	679 ft.	CB-3 Mild	Comsip - Customline 44-055/B-809-076	1 thru 6, 8 thru 11
OH51 P 0177B	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.2)	Control	679 ft.	CB-3 Mild	Comsip - Customline 44-188/B-809-081	1 thru 11
OH51 P 0178	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-144/B-809-243	2, 3, 4, 14
OH51 P 0193	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "A"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-147/B-809-237	2, 3, 4, 12, 13
OH51 P 0194	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "C"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-146/B-809-238	2, 3, 4, 12, 13
OH51 P 0195	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "B"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-145/B-809-239	2, 3, 4, 12, 13
IH51 P 0037	Control Panel, Floor Mounted, Enclosed	Pump Room Cooling HVAC Control Panel	Auxiliary	599 ft.	AB-9 Harsh	Comsip - Customline 44-151/B-809-073	1 thru 6,8, 10,11
IH51 P 0134A	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "A"	Auxiliary	620 ft.	AB-1 Mild	Comsip - Customline 44-148/B-809-230	2, 3, 4, 14
IH51 P 0134B	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "B"	Intermediate	654 ft.	FB-4 Mild	Comsip - Customline 44-058/B-209-248	2, 3, 4, 14
IH51 P 0142	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.1)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-149/B-201-142	13
IH51 P 0143	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.2)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-154/B-201-142	13

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-07
MANUFACTURER'S QUALIFICATION REPORT NO. (2940) A01A REV. 2
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Control Switch
MANUFACTURER/MODEL NO. GE/CR2940YS203E, 207M
TESTED DEVICE MODEL NO. CR2940Y

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-9	107°F	8,408 Hours
AVERAGE	AB-9	93°F	338,440 Hours
MINIMUM	AB-9	86°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-9	126°F	49 Hours
RADIATION DOSE (RADS, TID)	AB-9	8.8×10^2 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 266°F/14 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 32 Years/None
LIFE-LIMITING COMPONENT Plastic Materials Used in CR2940Y
TEST RADIATION DOSE (TID) 1×10^6 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Functional Test Performed After Aging
FUNCTION TIME (FT)	J (180 Days)	Note 6
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-9	217°F	266°F	49°F
PRESSURE (PSIG)	AB-9	1.6 PSIG	0 PSIG	Note 5
R.H. (%)	AB-9	100%	Note 7	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	AB-9	1×10^3 Rads	1×10^6 Rads (2)	>10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 3/16/84
CHECKED BY Eddie B. Thomas Jr. 3-19-84
APPROVED BY H. A. Mathews 3/20/84

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-07

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11–1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Not applicable to failure mode.

6. Aging test has enough margin to envelope the 180 days LOCA by analysis.

7. Equipment is installed in a NEMA 12 enclosure and will not be exposed to the high humidity condition existing outside the enclosure which exists for 30 seconds.

TABLE 1

MISCELLANEOUS PARTS AND MATERIALS LIST
FOR SPECIFICATION SP-594-4549-00
(MATERIALS OF CONSTRUCTION)

The items listed under Part A of this table are used in the equipment assemblies listed under Part B.

A. Items List

Item No.	Description	Manufacturer	Type No.
1.	Indicating Lamps	General Electric	ET-16
2.	Terminal Boards	General Electric	CR151B2
3.	Cable	General Electric	Vulkene Supreme SP-57279
4.	Terminal Lugs	Thomas & Betts	Sta-Kon RBT853
5.	Fuse Blocks	Buchanan	NQ0361
6.	Section Blocks	Buchanan	NQ0211
7.	BIW Wire	Boston	BOSTRAD XL
8.	Auxiliary Logic Relays	Agastat	7012

TABLE 1, Part A (continued)

Item No.	Description	Manufacturer	Type No.
9.	Auxiliary Logic Relays	General Electric	HMA111B
10.	Auxiliary Logic Relays	ITE-Gould	J10
11.	Control Switches	General Electric	CR2940Y
12.	Indicating Differential Pressure Switches	ITT Barton	580A-1
13.	Temperature Transmitters	Weed	4000
14.	Pressure Transmitters	Rosemount	1153

Table 1 (continued)

B. Equipment Assemblies List (Panels and Racks)

Panel/Rack IPL No.	Panel/Rack Description	Service Description System/Function	Location: Building - Elevation		Environmental Zone	Manufacturer & Mfr.Dwg.No./GAI Dwg.	Items Used Per Part A
OH51 P 0036A	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-056/B-201-142	1, 2, 3, 4, 11
OH51 P 0036B	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-155/B-201-142	1, 2, 3, 4, 11
OH51 P 0039	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-057/B-809-247	2, 3, 4, 14
OH51 P 0177A	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.1)	Control	679 ft.	CB-3 Mild	Comsip - Customline 44-055/B-809-076	1 thru 6, 8 thru 11
OH51 P 0177B	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.2)	Control	679 ft.	CB-3 Mild	Comsip - Customline 44-188/B-809-081	1 thru 11
OH51 P 0178	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-144/B-809-243	2, 3, 4, 14
OH51 P 0193	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "A"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-147/B-809-237	2, 3, 4, 12, 13
OH51 P 0194	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "C"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-146/B-809-238	2, 3, 4, 12, 13
OH51 P 0195	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "B"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-145/B-809-239	2, 3, 4, 12, 13
IH51 P 0037	Control Panel, Floor Mounted, Enclosed	Pump Room Cooling HVAC Control Panel	Auxiliary	599 ft.	AB-9 Harsh	Comsip - Customline 44-151/B-809-073	1 thru 6,8, 10,11
IH51 P 0134A	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "A"	Auxiliary	620 ft.	AB-1 Mild	Comsip - Customline 44-148/B-809-230	2, 3, 4, 14
IH51 P 0134B	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "B"	Intermediate	654 ft.	FB-4 Mild	Comsip - Customline 44-058/B-209-248	2, 3, 4, 14
IH51 P 0142	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.1)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-149/B-201-142	13
IH51 P 0143	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.2)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-154/B-201-142	13

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-09
MANUFACTURER'S QUALIFICATION REPORT NO. Req. #303-95085-CFR REV. -
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Indicating Lights
MANUFACTURER/MODEL NO. GE/ET-16
TESTED DEVICE MODEL NO. ET-16

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-9	107°F	8,408 Hours
AVERAGE	AB-9	93°F	338,440 Hours
MINIMUM	AB-9	86°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-9	126/107°F	49 Hours
RADIATION DOSE (RADS, TID)	AB-9	8.8×10^2 Rads(2)	40 Years

ACCELERATED AGING TEMP./TIMES 266°F/14 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 32 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 1×10^6 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Equipment Passed Functional Test After Each Aging Test
FUNCTION TIME (FT)	J (180 Days)	Note 6
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-9	217°F	266°F	49°F
PRESSURE (PSIG)	AB-9	1.6 PSIG	0 PSIG	Note 5
R.H. (%)	AB-9	100%	Note 7	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	AB-9	1×10^3 Rads	91.2×10^4 Rads (2)	> 10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 3/16/84
CHECKED BY Edie B. Morris 3-19-84
APPROVED BY W. A. Mathews 3/20/84

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-09

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Not applicable to failure mode.

6. Aging test has enough margin to envelope 180 days LOCA by analysis.

7. Equipment is installed in a NEMA 12 enclosure and will not be exposed to the high humidity condition existing outside the enclosure which exists for 30 seconds.

TABLE 1

MISCELLANEOUS PARTS AND MATERIALS LIST
FOR SPECIFICATION SP-594-4549-00
(MATERIALS OF CONSTRUCTION)

The items listed under Part A of this table are used in the equipment assemblies listed under Part B.

A. Items List

Item No.	Description	Manufacturer	Type No.
1.	Indicating Lamps	General Electric	ET-16
2.	Terminal Boards	General Electric	CR151B2
3.	Cable	General Electric	Vulkene Supreme SP-57279
4.	Terminal Lugs	Thomas & Betts	Sta-Kon RBT853
5.	Fuse Blocks	Buchanan	NQ0361
6.	Section Blocks	Buchanan	NQ0211
7.	BIW Wire	Boston	BOSTRAD XL
8.	Auxiliary Logic Relays	Agastat	7012

TABLE 1, Part A (continued)

Item No.	Description	Manufacturer	Type No.
9.	Auxiliary Logic Relays	General Electric	HMA111B
10.	Auxiliary Logic Relays	ITE-Gould	J10
11.	Control Switches	General Electric	CR2940Y
12.	Indicating Differential Pressure Switches	ITT Barton	580A-1
13.	Temperature Transmitters	Weed	4000
14.	Pressure Transmitters	Rosemount	1153

B. Equipment Assemblies List (Panels and Racks)

Panel/Rack MPL No.	Panel/Rack Description	Service Description System/Function	Location: Building - Elevation		Environmental Zone	Manufacturer & Mfr.Dwg.No./GAI Dwg.	Items Used Per Part A
OH51 P 0036A	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-056/B-201-142	1, 2, 3, 4, 11
OH51 P 0036B	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-155/B-201-142	1, 2, 3, 4, 11
OH51 P 0039	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-057/B-809-247	2, 3, 4, 14
OH51 P 0177A	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.1)	Control	679 ft.	CB-3 Mild	Comsip - Customline 44-055/B-809-076	1 thru 6, 8 thru 11
OH51 P 0177B	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.2)	Control	679 ft.	CB-3 Mild	Comsip - Customline 44-188/B-809-081	1 thru 11
OH51 P 0178	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-144/B-809-243	2, 3, 4, 14
OH51 P 0193	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "A"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-147/B-809-237	2, 3, 4, 12, 13
OH51 P 0194	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "C"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-146/B-809-238	2, 3, 4, 12, 13
OH51 P 0195	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "B"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-145/B-809-239	2, 3, 4, 12, 13
IH51 P 0037	Control Panel, Floor Mounted, Enclosed	Pump Room Cooling HVAC Control Panel	Auxiliary	599 ft.	AB-9 Harsh	Comsip - Customline 44-151/B-809-073	1 thru 6,8, 10,11
IH51 P 0134A	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "A"	Auxiliary	620 ft.	AB-1 Mild	Comsip - Customline 44-148/B-809-230	2, 3, 4, 14
IH51 P 0134B	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "B"	Intermediate	654 ft.	FB-4 Mild	Comsip - Customline 44-058/B-209-248	2, 3, 4, 14
IH51 P 0142	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.1)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-149/B-201-142	13
IH51 P 0143	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.2)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-154/B-201-142	13

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-12
MANUFACTURER'S QUALIFICATION REPORT NO. CC-74-133 REV. 0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Relays
MANUFACTURER/MODEL NO. Gould/J10A6012, J10A4412
TESTED DEVICE MODEL NO. J10

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-9	107°F	8,410 Hours
AVERAGE	AB-9	93°F	338,486 Hours
MINIMUM	AB-9	86°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F): Loss of HVAC	AB-9	126/107°F	49 Hours
RADIATION DOSE (RADS, TID)	AB-9	8.8×10^2 Rads(2)	40 Years

ACCELERATED AGING TEMP./TIMES 212°F/107 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 3.64 Years/None (Note 6)
LIFE-LIMITING COMPONENT Phenolic Relay Base Material A.E. = 1.358 eV
TEST RADIATION DOSE (TID) 1.0×10^7 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A3	Baseline Functional Test Performed after Aging
FUNCTION TIME (FT)	J (180 Days)	30-Days Test Extended to 180 Days LOCA by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY (Note 5)

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-9	217°F	212°F R1	Note 5
PRESSURE (PSIG)	AB-9	1.6 PSIG	1.1 PSIG	Note 5
R.H. (%)	AB-9	100%	100%	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	AB-9	1×10^3 Rads	1.0×10^7 Rads (2)	> 10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY Claude Gosch (GAI) 12/1/84
CHECKED BY Eddie B. Thomas Jr. 12-3-84
APPROVED BY [illegible] 12/6/84

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-12

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

N/A

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-12

SUPPLEMENTAL NOTES (Continued):

5. The Gould relays located in Harsh Environment (Zone AB-9) are not required to operate to mitigate the consequences of the RWCU line break in AB-9 and their failure is deemed not detrimental to plant safety or accident mitigation. The coils of these relays are in non-1E circuits, thus their operating function is non-1E. Since the coils do not perform a 1E function, the status of the relay contacts (open or closed) is not a 1E function. In fact, these contacts are used only to provide a low-flow alarm light for the pump cooling units with which these relays are associated.

6. No maintenance interval is required to maintain the qualified life of 3.64 years.

TABLE 1

MISCELLANEOUS PARTS AND MATERIALS LIST
FOR SPECIFICATION SP-594-4549-00
(MATERIALS OF CONSTRUCTION)

The items listed under Part A of this table are used in the equipment assemblies listed under Part B.

A. Items List

Item No.	Description	Manufacturer	Type No.
1.	Indicating Lamps	General Electric	ET-16
2.	Terminal Boards	General Electric	CR151B2
3.	Cable	General Electric	Vulkene Supreme SP-57279
4.	Terminal Lugs	Thomas & Betts	Sta-Kon RBT853
5.	Fuse Blocks	Buchanan	NQ0361
6.	Section Blocks	Buchanan	NQ0211
7.	BIW Wire	Boston	BOSTRAD XL
8.	Auxiliary Logic Relays	Agastat	7012

TABLE 1, Part A (continued)

Item No.	Description	Manufacturer	Type No.
9.	Auxiliary Logic Relays	General Electric	HMA111B
[redacted]	[redacted]	[redacted]	[redacted]
11.	Control Switches	General Electric	CR2940Y
12.	Indicating Differential Pressure Switches	ITT Barton	580A-1
13.	Temperature Transmitters	Weed	4000
14.	Pressure Transmitters	Rosemount	1153

Table I (continued)

B. Equipment Assemblies List (Panels and Racks)

Panel/Rack MPL No.	Panel/Rack Description	Service Description System/Function	Location: Building	Elevation	Environmental Zone	Manufacturer & Mfr.Dwg.No./CAI Dwg.	Items Used Per Part A
OHS1 P 0036A	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-056/B-201-142	1, 2, 3, 4, 11
OHS1 P 0036B	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-155/B-201-142	1, 2, 3, 4, 11
OHS1 P 0039	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-057/B-809-247	2, 3, 4, 14
[redacted]	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.1)	Control	679 ft.	[redacted]	Comsip - Customline 44-055/B-809-076	1 thru 6, 8 thru 11
[redacted]	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.2)	Control	679 ft.	[redacted]	Comsip - Customline 44-188/B-809-081	1 thru 11
OHS1 P 0178	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-144/B-809-243	2, 3, 4, 14
OHS1 P 0193	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "A"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-147/B-809-237	2, 3, 4, 12, 13
OHS1 P 0194	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "C"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-146/B-809-238	2, 3, 4, 12, 13
OHS1 P 0195	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "B"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-145/B-809-239	2, 3, 4, 12, 13
[redacted]	Control Panel, Floor Mounted, Enclosed	Pump Room Cooling HVAC Control Panel	Auxiliary	599 ft.	[redacted]	Comsip - Customline 44-151/B-809-073	1 thru 6,8, 10,11
IHS1 P 0134A	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "A"	Auxiliary	620 ft.	AB-1 Mild	Comsip - Customline 44-148/B-809-230	2, 3, 4, 14
IHS1 P 0134B	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "B"	Intermediate	654 ft.	FB-4 Mild	Comsip - Customline 44-058/B-209-248	2, 3, 4, 14
IHS1 P 0142	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.1)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-149/B-201-142	13
IHS1 P 0143	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.2)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-154/B-201-142	13

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-13
MANUFACTURER'S QUALIFICATION REPORT NO. ES-1000; 43706-2 REV. B
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Relay
MANUFACTURER/MODEL NO. Agastat/E7012-PCM, ACM, PCLM, ACLM
TESTED DEVICE MODEL NO. E7012

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-9	107°F	8,410 Hours
AVERAGE	AB-9	93°F	338,486 Hours
MINIMUM	AB-9	86°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F): Loss of HVAC	AB-9	126/107°F	49 Hours
RADIATION DOSE (RADS, TID)	AB-9	8.8×10^2 Rads(2)	40 Years

ACCELERATED AGING TEMP./TIMES 212°F/42 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 10 Years/None
LIFE-LIMITING COMPONENT Knob Seal, Washer, Diaphragm (A.E. - 0.61 eV)
TEST RADIATION DOSE (TID) 2×10^5 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A3	The relay was functionally tested during the hostile environment test.
FUNCTION TIME (FT)	J (180 Days)	30-Days Test extended to 180 Days Post-LOCA by Analysis
ACCURACY (ACC) (4)	± 10% (Note 4)	N/A
RESPONSE TIME (RT)	N/A (Note 4)	N/A

ACCIDENT SUMMARY (Note 5)

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-9	217°F	40-212°F	Note 5
PRESSURE (PSIG)	AB-9	1.6 PSIG	1.6 PSIG	Note 5
R.H. (%)	AB-9	100%	10-95%	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	AB-9	1×10^3 Rads	2×10^5 Rads (2)	> 10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY Claude Gosch (GAI) / 2/1/84
CHECKED BY Eddie B. Thomas Jr. 12-3-84
APPROVED BY [illegible] 12/6/84

QUALIFICATION SUMMARY (FILE NO.) SP-594-00-13

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   The only function of these relays is to prevent spurrious alarms. The relay has a maximum time delay of 15 seconds and a normal setting of 10 seconds. If the relay takes 15 seconds to change state, its function will have been performed. If the relay takes 0 seconds to change state, there will be a momentary alarm which will clear when the fan comes up to speed. Therefore, the accuracy of this relay is not critical.

5. The Agastat relays which are located in Harsh Environment (Zone AB-9) are normally de-energized and are not required to operate to mitigate the RWCU break in AB-9. The equipment in which they are located will not receive an auto start signal and will not be manually activated. Further, their failure is deemed not detrimental to plant safety or accident mitigation. It should be noted that the relays are qualified to 212°F maximum in their de-energized mode and that the short (15 second) temperature rise to 217°F <u>outside</u> the panel will not result in a temperature rise <u>inside</u> the panel above 212°F. This is because the panel is a NEMA-12 enclosure (sealed from moisture) which prevents the warm air outside the enclosure from quickly entering the enclosure and raising its internal temperature. Heat will be transferred by conduction, however, this will not occur quickly enough to raise the temperature inside the enclosure from 115°F to 217°F in 15 seconds. Further, the gaskets around all doors, conduit entries, and removable panels will prevent the 15-second 100% humidity and 1.6 psig pressure condition external to the panel from affecting its internal conditions. This analysis, however, is not required to prove qualification, since the relays are not required to operate to mitigate the RWCU break and their failure is deemed not detrimental to plant safety or accident mitigation.

TABLE 1

MISCELLANEOUS PARTS AND MATERIALS LIST
FOR SPECIFICATION SP-594-4549-00
(MATERIALS OF CONSTRUCTION)

The items listed under Part A of this table are used in the equipment assemblies listed under Part B.

A. Items List

Item No.	Description	Manufacturer	Type No.
1.	Indicating Lamps	General Electric	ET-16
2.	Terminal Boards	General Electric	CR151B2
3.	Cable	General Electric	Vulkene Supreme SP-57279
4.	Terminal Lugs	Thomas & Betts	Sta-Kon RBT853
5.	Fuse Blocks	Buchanan	NQ0361
6.	Section Blocks	Buchanan	NQ0211
7.	BIW Wire	Boston	BOSTRAD XL
8.	[redacted]	[redacted]	[redacted]

TABLE 1, Part A (continued)

Item No.	Description	Manufacturer	Type No.
9.	Auxiliary Logic Relays	General Electric	HMA111B
10.	Auxiliary Logic Relays	ITE-Gould	J10
11.	Control Switches	General Electric	CR2940Y
12.	Indicating Differential Pressure Switches	ITT Barton	580A-1
13.	Temperature Transmitters	Weed	4000
14.	Pressure Transmitters	Rosemount	1153

B. Equipment Assemblies List (Panels and Racks)

Panel/Rack MPL No.	Panel/Rack Description	Service Description System/Function	Location: Building - Elevation		Environmental Zone	Manufacturer & Mfr.Dwg.No./GAI Dwg.	Items Used Per Part A
OH51 P 0036A	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-056/B-201-142	1, 2, 3, 4, 11
OH51 P 0036B	Control Panel, Wall Mounted Box	ECC Pump Area HVAC Control Station	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-155/B-201-142	1, 2, 3, 4, 11
OH51 P 0039	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-057/B-809-247	2, 3, 4, 14
[redacted]	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.1)	Control	679 ft.	[redacted]	Comsip - Customline 44-055/B-809-076	1 thru 6, 8 thru 11
[redacted]	Control Panel, Free Standing, Enclosed	MCC, Swgr. & Batt. Rooms HVAC Control Panel (Divn.2)	Control	679 ft.	[redacted]	Comsip - Customline 44-188/B-809-081	1 thru 11
OH51 P 0178	Open Rack, Free Standing	Emergency Closed Cooling System Instr. Rack	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-144/B-809-243	2, 3, 4, 14
OH51 P 0193	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "A"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-147/B-809-237	2, 3, 4, 12, 13
OH51 P 0194	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "C"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-146/B-809-238	2, 3, 4, 12, 13
OH51 P 0195	Open Rack, Free Standing	ECCW Pumps & CC Chilled Water Instr. Rack "B"	Control	574 ft.	CB-5 Mild	Comsip - Customline 44-145/B-809-239	2, 3, 4, 12, 13
[redacted]	Control Panel, Floor Mounted, Enclosed	Pump Room Cooling HVAC Control Panel	Auxiliary	599 ft.	[redacted]	Comsip - Customline 44-151/B-809-073	1 thru 6,8, 10,11
IH51 P 0134A	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "A"	Auxiliary	620 ft.	AB-1 Mild	Comsip - Customline 44-148/B-809-230	2, 3, 4, 14
IH51 P 0134B	Open Rack, Free Standing	Containment Atmospheric Monitoring Instr. Rack "B"	Intermediate	654 ft.	FB-4 Mild	Comsip - Customline 44-058/B-209-248	2, 3, 4, 14
IH51 P 014	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.1)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-149/B-201-142	13
IH51 P 0143	Wall Mounted Box	Containment System Temp. Trans. Enclosure (Divn.2)	Intermediate	620 ft.	FB-5 Mild	Comsip - Customline 44-154/B-201-142	13

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-596-00-01
MANUFACTURER'S QUALIFICATION REPORT NO. 548-8854-2 REV. B
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Temperature Transmitters
MANUFACTURER/MODEL NO. Weed/4000R
TESTED DEVICE MODEL NO. 4000R

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON. ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,408 Hours
AVERAGE	FB-5	137°F	338,440 Hours
MINIMUM	FB-7	40°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	FB-7	163/138°F	49 Hours
RADIATION DOSE (RADS, TID)	FB-7	8.8×10^2 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 205°F/36.5 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL Note 5
LIFE-LIMITING COMPONENT Integrated Circuits, A.E. = 0.8 eV
TEST RADIATION DOSE (TID) 10^6 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Transmitter's Functions Verified after Test
FUNCTION TIME (FT)	J (180 Days)	30.4 Days Extended to 180-Day LOCA by Analysis
ACCURACY (ACC) (4)	±.1% (Note 2)	±.5%
RESPONSE TIME (RT)	5.00 Seconds	Less than 5 Seconds

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON. ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	FB-5	147°F	150°F	3°F
PRESSURE (PSIG)	FB-7	Atmos.	Atmos.	-
R.H. (%)	FB-7	90%	95%	N/A
SPRAY	FB-7	N/A	N/A	N/A
SUBMERGENCE	FB-7	N/A	N/A	N/A
RADIATION (RADS)	FB-7	7.37×10^5 Rads	1×10^6 Rads (2)	>10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV. NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 3/16/84
CHECKED BY Eddie D. Thomas Jr. 3-19-84
APPROVED BY [illegible] 3/20/84

QUALIFICATION SUMMARY (FILE NO.) SP-566-00-01 (Weed/4000R)

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   See attached position paper "Impact of Qualification on Instrument Accuracy Requirements."

5. Zone CB-3 - 22 Years/22 Years
   Zone CB-5 - 15 Years/15 Years
   Zone FB-5 - 2 Years/2 Years
   Zone FB-7 - 4 Years/4 Years
   Zone DG-1 - 10 Years/10 Years

IMPACT OF QUALIFICATION TEST RESULTS ON INSTRUMENT ACCURACY REQUIREMENTS

This document discusses the establishment of instrument accuracy and response time requirements. It maintains that the performance specifications established by the instrument manufacturer will in the majority of situations adequately meet the requirements of the application. Under harsh environments instrument performance may degrade beyond the normal specification limits. When this occurs, the instrument applications must be reexamined to evaluate the effects on the process requirements.

Establishing Performance Requirements

In the early phase of the design process a system engineer coordinates the selection of instrumentation with the procurement engineer to meet the performance requirements of the system. For the majority of situations, this effort utilizes the specified catalog accuracy and the design is slanted by this pre-knowledge of what the instrumentation is capable of achieving (under normal operation).

In a few cases, a critical performance requirement is identified early in the design process and the equipment is then specified to meet this requirement.

Typically, a concern with the instrument meeting its intended function is likely to occur at some point later. These cases, such as a change in process condition or setpoint, an instrument elevation change or adding a new functional requirement, results in the instrument application being examined on a case-by-case basis. Rarely does this require procurement of a new instrument, and the existing device can be demonstrated to be adequate. The concept of using manufacturer's accuracy as a system requirement is, therefore, justified on the basis of this experience.

Evaluating Accuracy/Response Time Requirement

Specific requirements within the regulations for accuracy/response time are not common. R.G. 1.97 does provide accuracy requirements (factor of 2) for radiation monitoring equipment i.e, Note 7 is applicable to SP621 and Note 9 applies to SP622 equipment. The manufacturer's accuracy for this equipment meets these requirements.

FSAR Table 6.2.32 although listing isolation valve closure times reflects the design basis but doesn't establish it for closure time. Here again catalog response time is used for SP597 valves; however, in most cases this figure isn't significant because many valves are either normally closed or under remote manual control.

When the qualification accuracy is demonstrated to be worse than the catalog (or specified) accuracy then the disparity must be examined and resonciled.

The evaluation of the Post Accident Monitoring (PAM) transmitter which you have is one approach on a generic basis for an analog loop application.

Another example occurred recently during review of the Barton (SP598) report: The attached memo identifies the concern. While the details of final resolution have to be worked out, it appears possible to remedy extreme accuracy perturbations which occur during the harsh environment. One method is to account for these inaccuracies in establishing the process analytical limit before calculating the instrument setpoint. These cases must be evaluated individually to identify the critical parameters.

In other instances, the disagreements between required and demonstrated accuracy or response time are relatively minor and these adjustments can be evaluated with little effort.

Reviewing Results

Generally required system accuracy will be equivalent to catalog accuracy. Under normal or abnormal operation condition this figure is still valid. For harsh condition some instruments will require only minor adjustments to the required system accuracy. Certain devices, however, will require a more detailed analysis to demonstrate the instrument's performance is adequate for its intended application.

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-596-00-01
MANUFACTURER'S QUALIFICATION REPORT NO. 548-8854-2 REV. B
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION RTD's
MANUFACTURER/MODEL NO. Weed/611-1A-D-4-C-152-A2-0, 611-1A-D-4-C-108-A2-0,
TESTED DEVICE MODEL NO. 611-1A-D-4-C-70-A2-0 611-1A-C-3-C-5.5-A2-0,
611-1A-C-4-C-8.5-A2-0,
611-1A-D-4-C-115-A2-0.

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,410 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-1	122°F	3,501 Hours
ABNORMAL TEMP. TRANSIENTS (°F): Loss of HVAC	AB-7	189°F	49 Hours
SRVD	CT-1	120°F	540 Hours
SCRAM	DW-1	141/135°F	300 Hours
RADIATION DOSE (RADS, TID)	DW-1	6×10^6 Rads (2)	8.57 Years - Note 7

ACCELERATED AGING TEMP./TIMES 304°F/30.4 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 8.57 Years/None
LIFE-LIMITING COMPONENT Epoxy Seal 2762, A.E. = 1.8 eV
TEST RADIATION DOSE (TID) 3.03×10^8 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Sensor Monitored During LOCA Test
FUNCTION TIME (FT)	J (180 Days)	30.4 Days LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	± .7%	± 0.5%
RESPONSE TIME (RT)	5.00 Sec.	Less than 5 Seconds.

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	485°F	155°F
PRESSURE (PSIG)	DW-1	22.1 PSIG	70 PSIG	47.9 PSIG
R.H. (%)	DW-1	100%	100%	N/A
SPRAY	DW-1	Demineralized Water	Chem Spray pH 7.5-9.5	N/A
SUBMERGENCE	DW-1	Note 5	Not Tested: Note 6	N/A
RADIATION (RADS)	DW-1	2.7×10^8 Rads (8)	2.97×10^8 Rads (2)	10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY Claude Gosch (GAI) / 2/1/84
CHECKED BY Eddie B. Thomas Jr. / 2-3-84
APPROVED BY [illegible] / 2/6/84

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN A HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-596-00-01

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   Specification SP-596-4549-00 (Generally accepted industry practice and standards).

5. Sensor may be submerged for a short time due to drywell swell.

6. Sensor functioned when subjected to chemical spray during LOCA test and saturated steam conditions.

7. This value is derived from a 40-year TID of 2.8×10^7 Rads. (See calculation of qualified life of RTD's.)

8. Beta radiation is not significant since all parts susceptible to radiation are shielded by metal enclosures.

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-596-00-01
MANUFACTURER'S QUALIFICATION REPORT NO. 548-8854-2 REV. B
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Thermocouples
MANUFACTURER/MODEL NO. Weed/E4D250G - 7A1
TESTED DEVICE MODEL NO. E4D-250G-4A1

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	TB-1	98°F	8,408 Hours
AVERAGE	TB-1	98°F	338,440 Hours
MINIMUM	AB-7	60°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	TB-1	147°F	49 Hours
RADIATION DOSE (RADS, TID)	TB-1	3.0×10^6 Rads(2)	40 Years

ACCELERATED AGING TEMP./TIMES 304°F/30.4 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT Epoxy Seal 2762, A.E. = 1.07 eV
TEST RADIATION DOSE (TID) 3.03×10^8 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Sensor Monitored During LOCA Test
FUNCTION TIME (FT)	J (180 Days)	30.4 Days LOCA Test Expanded to 180 Days by Analysis
ACCURACY (ACC) (4)	±2.5%	±.5%
RESPONSE TIME (RT)	5.00 Seconds	Less than 5 Seconds

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	TB-1	310°F	450°F	140°F
PRESSURE (PSIG)	TB-1	7 PSIG	63 PSIG	56 PSIG
R.H. (%)	TB-1	100%	100%	N/A
SPRAY	TB-1	N/A	N/A	N/A
SUBMERGENCE	TB-1	N/A	N/A	N/A
RADIATION (RADS)	TB-1	3.0×10^6 Rads	3.03×10^8 Rads (2)	>10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 3/16/84
CHECKED BY Eddie B. Thomas Jr. 3-17-84
APPROVED BY [illegible] 3/18/84

QUALIFICATION SUMMARY (FILE NO.) SP-596-00-01 (Weed/E4D250G-7A1)

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   See attached position paper "Impact of Qualification on Instrument Accuracy Requirements."

IMPACT OF QUALIFICATION TEST RESULTS ON INSTRUMENT ACCURACY REQUIREMENTS

This document discusses the establishment of instrument accuracy and response time requirements. It maintains that the performance specifications established by the instrument manufacturer will in the majority of situations adequately meet the requirements of the application. Under harsh environments instrument performance may degrade beyond the normal specification limits. When this occurs, the instrument applications must be reexamined to evaluate the effects on the process requirements.

Establishing Performance Requirements

In the early phase of the design process a system engineer coordinates the selection of instrumentation with the procurement engineer to meet the performance requirements of the system. For the majority of situations, this effort utilizes the specified catalog accuracy and the design is slanted by this pre-knowledge of what the instrumentation is capable of achieving (under normal operation).

In a few cases, a critical performance requirement is identified early in the design process and the equipment is then specified to meet this requirement.

Typically, a concern with the instrument meeting its intended function is likely to occur at some point later. These cases, such as a change in process condition or setpoint, an instrument elevation change or adding a new functional requirement, results in the instrument application being examined on a case-by-case basis. Rarely does this require procurement of a new instrument, and the existing device can be demonstrated to be adequate. The concept of using manufacturer's accuracy as a system requirement is, therefore, justified on the basis of this experience.

Evaluating Accuracy/Response Time Requirement

Specific requirements within the regulations for accuracy/response time are not common. R.G. 1.97 does provide accuracy requirements (factor of 2) for radiation monitoring equipment i.e, Note 7 is applicable to SP621 and Note 9 applies to SP622 equipment. The manufacturer's accuracy for this equipment meets these requirements.

FSAR Table 6.2.32 although listing isolation valve closure times reflects the design basis but doesn't establish it for closure time. Here again catalog response time is used for SP597 valves; however, in most cases this figure isn't significant because many valves are either normally closed or under remote manual control.

When the qualification accuracy is demonstrated to be worse than the catalog (or specified) accuracy then the disparity must be examined and resonciled.

The evaluation of the Post Accident Monitoring (PAM) transmitter which you have is one approach on a generic basis for an analog loop application.

Another example occurred recently during review of the Barton (SP598) report: The attached memo identifies the concern. While the details of final resolution have to be worked out, it appears possible to remedy extreme accuracy perturbations which occur during the harsh environment. One method is to account for these inaccuracies in establishing the process analytical limit before calculating the instrument setpoint. These cases must be evaluated individually to identify the critical parameters.

In other instances, the disagreements between required and demonstrated accuracy or response time are relatively minor and these adjustments can be evaluated with little effort.

Reviewing Results

Generally required system accuracy will be equivalent to catalog accuracy. Under normal or abnormal operation condition this figure is still valid. For harsh condition some instruments will require only minor adjustments to the required system accuracy. Certain devices, however, will require a more detailed analysis to demonstrate the instrument's performance is adequate for its intended application

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-596-00-01
MANUFACTURER'S QUALIFICATION REPORT NO. 548-8854-2 REV. B
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION RTD's
MANUFACTURER/MODEL NO. Weed/612-1A-C-3-C-11.5-0-0, 612-1A-C-4-C-11.5-0-0, 612-1-A-C-4-C-14.5-0-0
TESTED DEVICE MODEL NO. 612-1BD-D-6-C-14.00-0-0

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CB-5	89°F	8,408 Hours
AVERAGE	CB-5	88°F	338,440 Hours
MINIMUM	ES-W	60°F	2,693 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	CB-5	91°F	49 Hours
RADIATION DOSE (RADS, TID)	CB-5	1.8×10^2 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 304°F/30.4 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT Epoxy Seal 2762 A.E. = 1.07 eV
TEST RADIATION DOSE (TID) 3.03×10^8 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Sensor Monitored During LOCA Test
FUNCTION TIME (FT)	J (180 Days)	30.4 Days LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	±1%	±0.5%
RESPONSE TIME (RT)	5.00 Seconds	Less than 5 Seconds

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CB-5	89°F	450°F	361°F
PRESSURE (PSIG)	CB-5	Atmos.	63 PSIG	63 PSIG
R.H. (%)	CB-5	90%	100%	N/A
SPRAY	CB-5	N/A	N/A	N/A
SUBMERGENCE	CB-5	N/A	N/A	N/A
RADIATION (RADS)	CB-5	2.8×10^2 Rads	3.02×10^8 Rads (2)	>10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 3/16/84
CHECKED BY Eddie B. Thomas 3-17-84
APPROVED BY W. A. Mathews 3/18/84

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN A HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-596-00-01 (Weed/612)

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   See attached position paper "Impact of Qualification on Instrument Accuracy Requirements."

IMPACT OF QUALIFICATION TEST RESULTS ON INSTRUMENT ACCURACY REQUIREMENTS

This document discusses the establishment of instrument accuracy and response time requirements. It maintains that the performance specifications established by the instrument manufacturer will in the majority of situations adequately meet the requirements of the application. Under harsh environments instrument performance may degrade beyond the normal specification limits. When this occurs, the instrument applications must be reexamined to evaluate the effects on the process requirements.

Establishing Performance Requirements

In the early phase of the design process a system engineer coordinates the selection of instrumentation with the procurement engineer to meet the performance requirements of the system. For the majority of situations, this effort utilizes the specified catalog accuracy and the design is slanted by this pre-knowledge of what the instrumentation is capable of achieving (under normal operation).

In a few cases, a critical performance requirement is identified early in the design process and the equipment is then specified to meet this requirement.

Typically, a concern with the instrument meeting its intended function is likely to occur at some point later. These cases, such as a change in process condition or setpoint, an instrument elevation change or adding a new functional requirement, results in the instrument application being examined on a case-by-case basis. Rarely does this require procurement of a new instrument, and the existing device can be demonstrated to be adequate. The concept of using manufacturer's accuracy as a system requirement is, therefore, justified on the basis of this experience.

Evaluating Accuracy/Response Time Requirement

Specific requirements within the regulations for accuracy/response time are not common. R.G. 1.97 does provide accuracy requirements (factor of 2) for radiation monitoring equipment i.e, Note 7 is applicable to SP621 and Note 9 applies to SP622 equipment. The manufacturer's accuracy for this equipment meets these requirements.

FSAR Table 6.2.32 although listing isolation valve closure times reflects the design basis but doesn't establish it for closure time. Here again catalog response time is used for SP597 valves; however, in most cases this figure isn't significant because many valves are either normally closed or under remote manual control.

When the qualification accuracy is demonstrated to be worse than the catalog (or specified) accuracy then the disparity must be examined and resonciled.

The evaluation of the Post Accident Monitoring (PAM) transmitter which you have is one approach on a generic basis for an analog loop application.

Another example occurred recently during review of the Barton (SP598) report: The attached memo identifies the concern. While the details of final resolution have to be worked out, it appears possible to remedy extreme accuracy perturbations which occur during the harsh environment. One method is to account for these inaccuracies in establishing the process analytical limit before calculating the instrument setpoint. These cases must be evaluated individually to identify the critical parameters.

In other instances, the disagreements between required and demonstrated accuracy or response time are relatively minor and these adjustments can be evaluated with little effort.

Reviewing Results

Generally required system accuracy will be equivalent to catalog accuracy. Under normal or abnormal operation condition this figure is still valid. For harsh condition some instruments will require only minor adjustments to the required system accuracy. Certain devices, however, will require a more detailed analysis to demonstrate the instrument's performance is adequate for its intended application.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP596-000-01 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP596-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD	EC CAT ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	LF/MI	QUALIFICATION SUMMARY
OM23 N 0080A	MCC,SWGR&MISC ELECT EQUIP AREA HVAC		WEED	CB-3	A	A4	J	YES	.001		YES	T	40Y	SP596-000-01
	FAN DISCHARGE TEMPERATURE		4000R	MILD					5.00	SEC			22Y	
	596	TEMPERTURE	TRANSMITTER	CCE/03-679										
OM23 N 0080B	MCC,SWGR&MISC ELECT EQUIP AREA HVAC		WEED	CB-3	A	A4	J	YES	.001		YES	T	40Y	SP596-000-01
	FAN DISCHARGE TEMPERATURE		4000R	MILD					5.00	SEC			22Y	
	596	TEMPERATURE	TRANSMITTER	CCA/03-679										
OM25 N 0100A	CONTROL ROOM HVAC		WEED	CB-3	A	A4	J	YES	.001		YES	T	40Y	SP596-000-01
	FAN DISCHARGE TEMPERATURE		4000R	MILD					5.00	SEC			22Y	
	596	TEMPERATURE	TRANSMITTER	CCC/04-679										
OM25 N 0100B	CONTROL ROOM HVAC		WEED	CB-3	A	A4	J	YES	.001		YES	T	40Y	SP596-000-01
	FAN DISCHARGE TEMPERATURE		4000R	MILD					5.00	SEC			22Y	
	596	TEMPERATURE	TRANSMITTER	CCC/04-679										
OP42 N 0312A	EMERGENCY CLOSED COOLING WATER		WEED	CB-5	A	A4	J	YES	.001		YES	T	40Y	SP596-000-01
	CONTROL COMPLEX CHLR A OUTLET TEMP		4000	MILD					N/A				10Y	
	594	TEMPERATURE	TRANSMITTER	CCE/02-574										
OP42 N 0312B	EMERGENCY CLOSED COOLING WATER		WEED	CB-5	A	A4	J	YES	.001		YES	T	40Y	SP596-000-01
	CONTROL COMPLEX CHLR B OUTLET TEMP		4000	MILD					N/A				10Y	
	594	TEMPERATURE	TRANSMITTER	CCC/02-574										
OP42 N 0312C	EMERGENCY CLOSED COOLING WATER		WEED	CB-5	A	A4	J	YES	.001		YES	T	40Y	SP596-000-01
	CONTROL COMPLEX CHLR C OUTLET TEMP		4000	MILD					N/A				10Y	
	594	TEMPERATURE	TRANSMITTER	CCD/02-574										
OP42 N 0320A	EMERGENCY CLOSED COOLING WATER		WEED	CB-5	A	A4	J	YES	.010		YES	T	40Y	SP596-000-01
	CONTROL COMPLEX CHLR A OUTLET TEMP		612-1A-C-3-C-11.5-00	MILD					5.00	SEC			40Y	
	596	RESISTANCE	TEMPERTURE DETECTOR	CCE/03-574										
OP42 N 0320B	EMERGENCY CLOSED COOLING WATER		WEED	CB-5	A	A4	J	YES	.010		YES	T	40Y	SP596-000-01
	CONTROL COMPLEX CHLR B OUTLET TEMP		612-1A-C-3-C-11.5-00	MILD					5.00	SEC			40Y	
	596	RESISTANCE	TEMPERTURE DETECTOR	CCC/03-574										
OP42 N 0320C	EMERGENCY CLOSED COOLING WATER		WEED	CB-5	A	A4	J	YES	.010		YES	T	40Y	SP596-000-01
	CONTROL COMPLEX CHLR C OUTLET TEMP		612-1A-C-3-C-11.5-00	MILD					5.00	SEC			40Y	
	596	RESISTANCE	TEMPERATURE DETECTO	CCD/03-574										
1D23 N 0050A	CONTAINMENT ATMOSPHERE MONITORING		WEED	CT-2	A	A1	J	YES	.005		YES	T	40Y	SP596-000-01
	SUPP POOL WATER TEMP ASSEMBLY		611-1A-D-4-C-152-A20	HARSH					5.00	SEC			40Y	
	596	RESISTANCE	TEMPERATURE DETECTO	C 0/01-559				YES	H2					

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP596-000-01 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP596-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1D23 N 0050B	CONTAINMENT ATMOSPHERE MONITORING		WEED	CT-2	A	A1	J	YES	.005		YES	T	40Y	SP596-000-01
	SUPP POOL WATER TEMP ASSEMBLY		611-1A-D-4-C-152-A20	HARSH					5.00	SEC			40Y	
	596 RESISTANCE		TEMPERATURE DETECTO	C 0/01-599				YES	H2					
1D23 N 0051A	CONTAINMENT ATMOSPHERE MONITORING		WEED	FB-5	A	A4	J	YES	.001		YES	T	10Y	SP596-000-01
	SUPP POOL TEMPERATURE		4000	MILD					N/A				19M	
	594 TEMPERATURE		TRANSMITTER	IBF/05-620										
1D23 N 0051B	CONTAINMENT ATMOSPHERE MONITORING		WEED	FB-5	A	A4	J	YES	.001		YES	T	10Y	SP596-000-01
	SUPP POOL TEMPERATURE		4000	MILD					N/A				19M	
	594 TEMPERATURE		TRANSMITTER	IBD/02-620										
1D23 N 0060A	CONTAINMENT ATMOSPHERE MONITORING		WEED	CT-2	A	A1	J	YES	.005		YES	T	40Y	SP596-000-01
	SUPP POOL WATER TEMP ASSEMBLY		611-1A-D-4-C-108-A20	HARSH					5.00	SEC			40Y	
	596 RESISTANCE		TEMPERATURE DETECTO	C 0/03-599				YES	H2					
1D23 N 0060B	CONTAINMENT ATMOSPHERE MONITORING		WEED	CT-2	A	A1	J	YES	.005		YES	T	40Y	SP596-000-01
	SUPP POOL WATER TEMP ASSEMBLY		611-1A-D-4-C-108-A20	HARSH					5.00	SEC			40Y	
	596 RESISTANCE		TEMPERATURE DETECTO	C 0/04-599				YES	H2					
1D23 N 0061A	CONTAINMENT ATMOSPHERE MONITORING		WEED	FB-5	A	A4	J	YES	.001		YES	T	10Y	SP596-000-01
	SUPP POOL TEMPERATURE		4000	MILD					N/A				19M	
	594 TEMPERATURE		TRANSMITTER	IBF/05-620										
1D23 N 0061B	CONTAINMENT ATMOSPHERE MONITORING		WEED	FB-5	A	A4	J	YES	.001		YES	T	10Y	SP596-000-01
	SUPP POOL TEMPERATURE		4000	MILD					N/A				19M	
	594 TEMPERATURE		TRANSMITTER	IBD/02-620										
1D23 N 0070A	CONTAINMENT ATMOSPHERE MONITORING		WEED	CT-2	A	A1	J	YES	.005		YES	T	40Y	SP596-000-01
	SUPP POOL WATER TEMP ASSEMBLY		611-1A-D-4-C-108-A20	HARSH					5.00	SEC			40Y	
	596 RESISTANCE		TEMPERATURE DETECTO	C 0/06-599				YES	H2					
1D23 N 0070B	CONTAINMENT ATMOSPHERE MONITORING		WEED	CT-2	A	A1	J	YES	.005		YES	T	40Y	SP596-000-01
	SUPP POOL WATER TEMP ASSEMBLY		611-1A-D-4-C-152-A20	HARSH					5.00	SEC			40Y	
	596 RESISTANCE		TEMPERATURE DETECTO	C 0/07-599				YES	H2					
1D23 N 0071A	CONTAINMENT ATMOSPHERE MONITORING		WEED	FB-5	A	A4	J	YES	.001		YES	T	10Y	SP596-000-01
	SUPP POOL TEMPERATURE		4000	MILD					N/A				19M	
	594 TEMPERATURE		TRANSMITTER	IBF/05-620										
1D23 N 0071B	CONTAINMENT ATMOSPHERE MONITORING		WEED	FB-5	A	A4	J	YES	.001		YES	T	10Y	SP596-000-01
	SUPP POOL TEMPERATURE		4000	MILD					N/A				19M	
	594 TEMPERATURE		TRANSMITTER	IBD/02-620										

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP596-000-01 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP596-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER / MODEL	ZONE / LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1D23 N 008CA	CONTAINMENT ATMOSPHERE MONITORING		WEED	CT-2	A	A1	J	YES	.005		YES	T 40Y	SP596-000-01
	SUPP POOL WATER TEMP ASSEMBLY		611-1A-D-4-C-152-A20	HARSH					5.00	SEC		40Y	
	596	RESISTANCE	TEMPERATURE DETECTO	C 0/08-599				YES	H2				
1D23 N 008OB	CONTAINMENT ATMOSPHERE MONITORING		WEED	CT-2	A	A1	J	YES	.005		YES	T 40Y	SP596-000-01
	SUPP POOL WATER TEMP ASSEMBLY		611-1A-D-4-C-108-A20	HARSH					5.00	SEC		40Y	
	596	RESISTANCE	TEMPERATURE DETECTO	C 0/09-599				YES	H2				
1D23 N 0081A	CONTAINMENT ATMOSPHERE MONITORING		WEED	FB-5	A	A4	J	YES	.001		YES	T 10Y	SP596-000-01
	SUPP POOL TEMPERATURE		4000	MILD					N/A			19M	
	594	TEMPERATURE	TRANSMITTER	IBF/05-620									
1D23 N 0081B	CONTAINMENT ATMOSPHERE MONITORING		WEED	FB-5	A	A4	J	YES	.001		YES	T 10Y	SP596-000-01
	SUPP POOL TEMPERATURE		4000	MILD					N/A			19M	
	594	TEMPERATURE	TRANSMITTER	IBD/02-620									
1D23 N 0100A	CONTAINMENT ATMOSPHERE MONITORING		WEED	DW-1	A	A1	J	YES	.004		YES	T 08Y	SP596-000-01
	DRYWELL AIR TEMP		611-1A-C-3-C-5.5-A20	HARSH					5.00	SEC		08Y	
	596	RESISTANCE	TEMPERATURE DETECTO	C I/16-642				YES	H2				
1D23 N 0100B	CONTAINMENT ATMOSPHERE MONITORING		WEED	DW-1	A	A1	J	YES	.004		YES	T 08Y	SP596-000-01
	DRYWELL AIR TEMP		611-1A-C-3-C-5.5-A20	HARSH					5.00	SEC		08Y	
	596	RESISTANCE	TEMPERATURE DETECTO	C I/07-642				YES	H2				
1D23 N 0101A	CONTAINMENT ATMOSPHERE MONITORING		WEED	FB-5	A	A4	J	YES	.001		YES	T 10Y	SP596-000-01
	DRYWELL TEMPERATURE		4000	MILD					N/A			19M	
	594	TEMPERATURE	TRANSMITTER	IBF/05-620									
1D23 N 0101B	CONTAINMENT ATMOSPHERE MONITORING		WEED	FB-5	A	A4	J	YES	.001		YES	T 10Y	SP596-000-01
	DRYWELL TEMPERATURE		4000	MILD					N/A			19M	
	594	TEMPERATURE	TRANSMITTER	IBD/02-620									
1D23 N 0110A	CONTAINMENT ATMOSPHERE MONITORING		WEED	DW-1	A	A1	J	YES	.004		YES	T 08Y	SP596-000-01
	DRYWELL AIR TEMP		611-1A-C-3-C-5.5-A20	HARSH					5.00	SEC		08Y	
	596	RESISTANCE	TEMPERATURE DETECTO	C I/16-620				YES	H2				
1D23 N 0110B	CONTAINMENT ATMOSPHERE MONITORING		WEED	DW-1	A	A1	J	YES	.004		YES	T 08Y	SP596-000-01
	DRYWELL AIR TEMP		611-1A-C-3-C-5.5-A20	HARSH					5.00	SEC		08Y	
	596	RESISTANCE	TEMPERATURE DETECTO	C I/07-620				YES	H2				
1D23 N 0111A	CONTAINMENT ATMOSPHERE MONITORING		WEED	FB-5	A	A4	J	YES	.001		YES	T 10Y	SP596-000-01
	DRYWELL TEMPERATURE		4000	MILD					N/A			19M	
	594	TEMPERATURE	TRANSMITTER	IBF/05-620									

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP596-000-01 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP596-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD	EC CAT ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1D23 N 0111B	CONTAINMENT ATMOSPHERE MONITORING DRYWELL TEMPERATURE 594	TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBD/02-620	A	A4	J	YES	.001 N/A		YES	T	10Y 19M	SP596-000-01
1D23 N 0120A	CONTAINMENT ATMOSPHERE MONITORING DRYWELL AIR TEMP 596	RESISTANCE	WEED 611-1A-C-3-C-5.5-A20 TEMPERATURE DETECTO	DW-1 HARSH C I/16-599	A	A1	J	YES YES	.004 5.00 SEC H2		YES	T	08Y 08Y	SP596-000-01
1D23 N 0120B	CONTAINMENT ATMOSPHERE MONITORING DRYWELL AIR TEMP 596	RESISTANCE	WEED 611-1A-C-3-C-5.5-A20 TEMPERATURE DETECTO	DW-1 HARSH C I/07-599	A	A1	J	YES YES	.004 5.00 SEC H2		YES	T	08Y 08Y	SP596-000-01
1D23 N 0121A	CONTAINMENT ATMOSPHERE MONITORING DRYWELL TEMPERATURE 594	TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBF/05-620	A	A4	J	YES	.001 N/A		YES	T	10Y 19M	SP596-000-01
1D23 N 0121B	CONTAINMENT ATMOSPHERE MONITORING DRYWELL TEMPERATURE 594	TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBD/02-620	A	A4	J	YES	.001 N/A		YES	T	10Y 19M	SP596-000-01
1D23 N 0130A	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT AIR TEMP 596	RESISTANCE	WEED 611-1A-C-3-C-5.5-A20 TEMPERATURE DETECTO	CT-4 HARSH C 0/14-689	A	A1	J	YES YES	.007 5.00 SEC H2		YES	T	40Y 40Y	SP596-000-01
1D23 N 0130B	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT AIR TEMP 596	RESISTANCE	WEED 611-1A-C-3-C-5.5-A20 TEMPERATURE DETECTO	CT-1 HARSH C 0/04-720	A	A1	J	YES YES	.007 5.00 SEC H2		YES	T	40Y 40Y	SP596-000-01
1D23 N 0131A	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT TEMPERATURE 594	TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBF/05-620	A	A4	J	YES	.001 N/A		YES	T	10Y 19M	SP596-000-01
1D23 N 0131B	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT TEMPERATURE 594	TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBD/02-620	A	A4	J	YES	.001 N/A		YES	T	10Y 19M	SP596-000-01
1D23 N 0140A	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT AIR TEMP 596	RESISTANCE	WEED 611-1A-C-3-C-5.5-A20 TEMPERATURE DETECTO	CT-1 HARSH C 0/01-664	A	A1	J	YES YES	.007 5.00 SEC H2		YES	T	40Y 40Y	SP596-000-01
1D23 N 0140B	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT AIR TEMP 596	RESISTANCE	WEED 611-1A-C-3-C-5.5-A20 TEMPERATURE DETECTO	CT-1 HARSH C 0/11-664	A	A1	J	YES YES	.007 5.00 SEC H2		YES	T	40Y 40Y	SP596-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP596-000-01 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP596-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD	EC CAT ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1D23 N 0141A	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT TEMPERATURE 594 TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBF/05-620	A	A4	J	YES	.001 N/A	YES	T		10Y 19M	SP596-000-01
1D23 N 0141B	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT TEMPERATURE 594 TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBD/02-620	A	A4	J	YES	.001 N/A	YES	T		10Y 19M	SP596-000-01
1D23 N 0150A	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT AIR TEMP 596 RESISTANCE	WEED 611-1A-C-3-C-5.5-A20 TEMPERATURE DETECTO	CT-4 HARSH C 0/02-642	A	A1	J	YES YES	.007 5.00 SEC H2	YES	T		40Y 40Y	SP596-000-01
1D23 N 0150B	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT AIR TEMP 596 RESISTANCE	WEED 611-1A-C-3-C-5.5-A20 TEMPERATURE DETECTO	CT-4 HARSH C 0/13-642	A	A1	J	YES YES	.007 5.00 SEC H2	YES	T		40Y 40Y	SP596-000-01
1D23 N 0151A	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT TEMPERATURE 594 TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBF/05-620	A	A4	J	YES	.001 N/A	YES	T		10Y 19M	SP596-000-01
1D23 N 0151B	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT TEMPERATURE 594 TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBD/02-620	A	A4	J	YES	.001 N/A	YES	T		10Y 19M	SP596-000-01
1D23 N 0160A	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT AIR TEMP 596 RESISTANCE	WEED 611-1A-C-3-C-5.5-A20 TEMPERATURE DETECTO	CT-2 HARSH C 0/03-599	A	A1	J	YES YES	.007 5.00 SEC H2	YES	T		40Y 40Y	SP596-000-01
1D23 N 0160B	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT AIR TEMP 596 RESISTANCE	WEED 611-1A-C-3-C-5.5-A20 TEMPERATURE DETECTO	CT-2 HARSH C 0/13-599	A	A1	J	YES YES	.007 5.00 SEC H2	YES	T		40Y 40Y	SP596-000-01
1D23 N 0161A	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT TEMPERATURE 594 TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBF/05-620	A	A4	J	YES	.001 N/A	YES	T		10Y 19M	SP596-000-01
1D23 N 0161B	CONTAINMENT ATMOSPHERE MONITORING CONTAINMENT TEMPERATURE 594 TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBD/02-620	A	A4	J	YES	.001 N/A	YES	T		10Y 19M	SP596-000-01
1D23 N 0170A	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL WATER TEMP ASSEMBLY 596 RESISTANCE	WEED 611-1A-D-4-C-108-A20 TEMPERATURE DETECTO	CT-2 HARSH C 0/10-599	A	A1	J	YES YES	.005 5.00 SEC H2	YES	T		40Y 40Y	SP596-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP596-000-01 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP596-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2 DEMO	ACC/RT TME DEMO	QUALIFICATION M LF/MI	SUMMARY
1D23 N 0170B	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL WATER TEMP ASSEMBLY 596	RESISTANCE	WEED 611-1A-D-4-C-152-A20 TEMPERATURE DETECTO	CT-2 HARSH C 0/11-599	A	A1	J	YES YES	.005 5.00 SEC H2	YES	T 40Y 40Y	SP596-000-01
1D23 N 0171A	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL TEMPERATURE 594	TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBF/05-620	A	A4	J	YES	.001 N/A	YES	T 10Y 19M	SP596-000-01
1D23 N 0171B	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL TEMPERATURE 594	TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBD/02-620	A	A4	J	YES	.001 N/A	YES	T 10Y 19M	SP596-000-01
1D23 N 0180A	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL WATER TEMP ASSEMBLY 596	RESISTANCE	WEED 611-1A-D-4-C-152-A20 TEMPERATURE DETECTO	CT-2 HARSH C 0/12-599	A	A1	J	YES YES	.005 5.00 SEC H2	YES	T 40Y 40Y	SP596-000-01
1D23 N 0180B	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL WATER TEMP ASSEMBLY 596	RESISTANCE	WEED 611-1A-D-4-C-108-A20 TEMPERATURE DETECTO	CT-2 HARSH C 0/14-599	A	A1	J	YES YES	.005 5.00 SEC H2	YES	T 40Y 40Y	SP596-000-01
1D23 N 0181A	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL TEMPERATURE 594	TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBF/05-620	A	A4	J	YES	.001 N/A	YES	T 10Y 19M	SP596-000-01
1D23 N 0181B	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL TEMPERATURE 594	TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBD/02-620	A	A4	J	YES	.001 N/A	YES	T 10Y 19M	SP596-000-01
1D23 N 0190A	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL WATER TEMP ASSEMBLY 596	RESISTANCE	WEED 611-1A-D-4-C-152-A20 TEMPERATURE DETECTO	CT-2 HARSH C 0/14-599	A	A1	J	YES YES	.005 5.00 SEC H2	YES	T 40Y 40Y	SP596-000-01
1D23 N 0190B	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL WATER TEMP ASSEMBLY 596	RESISTANCE	WEED 611-1A-D-4-C-152-A20 TEMPERATURE DETECTO	CT-2 HARSH C 0/15-599	A	A1	J	YES YES	.005 5.00 SEC H2	YES	T 40Y 40Y	SP596-000-01
1D23 N 0191A	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL TEMPERATURE 594	TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBF/05-620	A	A4	J	YES	.001 N/A	YES	T 10Y 19M	SP596-000-01
1D23 N 0191B	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL TEMPERATURE 594	TEMPERATURE	WEED 4000 TRANSMITTER	FB-5 MILD IBD/02-620	A	A4	J	YES	.001 N/A	YES	T 10Y 19M	SP596-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP596-000-01 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP596-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES TME H2/H2 DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1D23 N 0200A	CONTAINMENT ATMOSPHERE MONITORING	WEED	CT-2	A	A1	J	YES	.005	YES	T 40Y	SP596-000-01
	SUPP POOL WATER TEMP ASSEMBLY	611-1A-D-4-C-108-A20	HARSH					5.00 SEC		40Y	
	596 RESISTANCE	TEMPERATURE DETECTO	C 0/17-599				YES	H2			
1D23 N 0200B	CONTAINMENT ATMOSPHERE MONITORING	WEED	CT-2	A	A1	J	YES	.005	YES	T 40Y	SP596-000-01
	SUPP POOL WATER TEMP ASSEMBLY	611-1A-D-4-C-108-A20	HARSH					5.00 SEC		40Y	
	596 RESISTANCE	TEMPERATURE DETECTO	C 0/17-599				YES	H2			
1D23 N 0201A	CONTAINMENT ATMOSPHERE MONITORING	WEED	FB-5	A	A4	J	YES	.001	YES	T 10Y	SP596-000-01
	SUPP POOL TEMPERATURE	4000	MILD					N/A		19M	
	594 TEMPERATURE	TRANSMITTER	IBF/05-620								
1D23 N 0201B	CONTAINMENT ATMOSPHERE MONITORING	WEED	FB-5	A	A4	J	YES	.001	YES	T 10Y	SP596-000-01
	SUPP POOL TEMPERATURE	4000	MILD					N/A		19M	
	594 TEMPERATURE	TRANSMITTER	IBD/02-620								
1D23 N 0210	CONTAINMENT ATMOSPHERE MONITORING	WEED	DW-1	A	A1	J	YES	.001	YES	T 08Y	SP596-000-01
	DRYWELL AIR TEMP	611-1A-C-4-C-8.5-A20	HARSH					5.00 SEC		08Y	
	596 RESISTANCE TEMPERA-	TURE DETECTOR	C I/07-642				YES	H2			
1D23 N 0211	CONTAINMENT ATMOSPHERE MONITORING	WEED	FB-5	A	A4	J	YES	.001	YES	T 40Y	SP596-000-01
	DRYWELL TEMP TRANSMITTER	4000R	MILD					5.00 SEC		23M	
	596 TEMPERATURE	TRANSMITTER	IBG/05-620								
1D23 N 0220	CONTAINMENT ATMOSPHERE MONITORING	WEED	CT-2	A	A1	J	YES	.001	YES	T 40Y	SP596-000-01
	SUPP POOL WATER TEMP ASSEMBLY	611-1A-D-4-C-152-A20	HARSH					5.00 SEC		40Y	
	596 RESISTANCE TEMPERA-	TURE DETECTOR	C 0/10-599				YES	H2			
1D23 N 0221	CONTAINMENT ATMOSPHERE MONITORING	WEED	FB-5	A	A4	J	YES	.001	YES	T 40Y	SP596-000-01
	SUPP POOL TEMP TRANSMITTER	4000R	MILD					5.00 SEC		23M	
	596 TEMPERATURE	TRANSMITTER	IBG/05-620								
1E31 N 0350A	LEAK DETECTION SYSTEM	WEED	AB-7	A	A1	J	YES	.025	YES	T 40Y	SP596-000-01
	MSL STEAM TUNNEL AMBIENT	E4D250G-7A1	HARSH					5.00 SEC		40Y	
	596 THERMOCOUPLE		TPA/08-620				YES				
1E31 N 0350B	LEAK DETECTION SYSTEM	WEED	AB-7	A	A1	J	YES	.025	YES	T 40Y	SP596-000-01
	MSL STEAM TUNNEL AMBIENT	E4D250G-7A1	HARSH					5.00 SEC		40Y	
	596 THERMOCOUPLE		TPA/03-620				YES				
1E31 N 0350C	LEAK DETECTION SYSTEM	WEED	AB-7	A	A1	J	YES	.025	YES	T 40Y	SP596-000-01
	MSL STEAM TUNNEL AMBIENT	E4D250G-7A1	HARSH					5.00 SEC		40Y	
	596 THERMOCOUPLE		TPA/08-620				YES				

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP596-000-01 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP596-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER / MODEL	ZONE / LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1E31 N 0350D	LEAK DETECTION SYSTEM		WEED	AB-7	A	A1	J	YES	.025		YES	T	40Y	SP596-000-01
	MSL STEAM TUNNEL AMBIENT		E4D250G-7A1	HARSH					5.00 SEC				40Y	
	596	THERMOCOUPLE		TPA/08-620				YES						
1E31 N 0360A	LEAK DETECTION SYSTEM		WEED	TB-1	A	A1	J	YES	.025		YES	T	40Y	SP596-000-01
	MSL TURBINE BLDG AMBIENT		E4D250G-7A1	HARSH					5.00 SEC				40Y	
	596	THERMOCOUPLE		TBE/13-620				YES						
1E31 N 0360B	LEAK DETECTION SYSTEM		WEED	TB-1	A	A1	J	YES	.025		YES	T	40Y	SP596-000-01
	MSL TURBINE BLDG AMBIENT		E4D250G-7A1	HARSH					5.00 SEC				40Y	
	596	THERMOCOUPLE		TBE/13-620				YES						
1E31 N 0360C	LEAK DETECTION SYSTEM		WEED	TB-1	A	A1	J	YES	.025		YES	T	40Y	SP596-000-01
	MSL TURBINE BLDG AMBIENT		E4D250G-7A1	HARSH					5.00 SEC				40Y	
	596	THERMOCOUPLE		TBE/13-620				YES						
1E31 N 0360D	LEAK DETECTION SYSTEM		WEED	TB-1	A	A1	J	YES	.025		YES	T	40Y	SP596-000-01
	MSL TURBINE BLDG AMBIENT		E4D250G-7A1	HARSH					5.00 SEC				40Y	
	596	THERMOCOUPLE		TBE/13-620				YES						
1G43 N 0010A	SUPPRESSION POOL MAKE-UP SYSTEM		WEED	CT-4	A	A1	J	YES	.005		YES	T	40Y	SP596-000-01
	FUEL STRG POOL WATER TEMP		611-1A-D-4-C-115-A20	HARSH					5.00 SEC				40Y	
	596	RESISTANCE	TEMPERATURE DETECTO	C 0/10-664				YES	H2					
1G43 N 0010B	SUPPRESSION POOL MAKE-UP SYSTEM		WEED	CT-4	A	A1	J	YES	.005		YES	T	40Y	SP596-000-01
	SEPARATOR STRG WELL WATER TEMP		611-1A-D-4-C-115-A20	HARSH					5.00 SEC				40Y	
	596	RESISTANCE	TEMPERATURE DETECTO	C 0/17-664				YES	H2					
1G43 N 0011A	SUPPRESSION POOL MAKE-UP SYSTEM		WEED	FB-5	A	A4	J	YES	.001		YES	T	10Y	SP596-000-01
	FUEL STORAGE POOL WATER TEMP		4000	MILD					N/A				19M	
	594	TEMPERATURE	TRANSMITTER	IBF/05-620										
1G43 N 0011B	SUPPRESSION POOL MAKE-UP SYSTEM		WEED	FB-5	A	A4	J	YES	.001		YES	T	10Y	SP596-000-01
	SEPARATOR STORAGE WELL WATER TEMP		4000	MILD					N/A				19M	
	594	TEMPERATURE	TRANSMITTER	IBD/02-620										
1M15 N 0021A	ANNULUS EXHAUST GAS TREATMENT SYSTEM		WEED	FB-7	A	A1	J	YES	.001		YES	T	40Y	SP596-000-01
	PLENUM TEMPERATURE		4000R	HARSH					5.00 SEC				49M	
	596	TEMPERATURE	TRANSMITTER	IBI/05-620				YES						
1M15 N 0021B	ANNULUS EXHAUST GAS TREATMENT SYSTEM		WEED	FB-7	A	A1	J	YES	.001		YES	T	40Y	SP596-000-01
	PLENUM TEMPERATURE		4000R	HARSH					5.00 SEC				49M	
	596	TEMPERATURE	TRANSMITTER	IBJ/05-620				YES						

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP596-000-01 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP596-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES TME H2/H2 DEMO	ACC/RT DEMO	M LF/MI	QUALIFICATION SUMMARY
1M32 N 0020A	ESW PUMPHOUSE HVAC FAN DISCHARGE AIR TEMPERATURE 596 TEMPERTURE	WEED 4000R TRANSMITTER	ES-W MILD EWD/04-586	A	A4	J YES	.001 5.00 SEC	YES	T 40Y 28Y	SP596-000-01
1M32 N 0020B	ESW PUMPHOUSE HVAC FAN DISCHARGE AIR TEMPERATURE 596 TEMPERTURE	WEED 4000R TRANSMITTER	ES-W MILD EWD/02-586	A	A4	J YES	.001 5.00 SEC	YES	T 40Y 28Y	SP596-000-01
1M43 N 0010A	DG BUILDING HVAC FAN SUCTION AIR TEMPERATURE 596 TEMPERATURE	WEED 4000R TRANSMITTER	DG-1 MILD DGD/02-620	A	A4	J YES	.001 5.00 SEC	YES	T 40Y 10Y	SP596-000-01
1M43 N 0010B	DG BUILDING HVAC FAN SUCTION AIR TEMPERATURE 596 TEMPERATURE	WEED 4000R TRANSMITTER	DG-1 MILD DGB/02-620	A	A4	J YES	.001 5.00 SEC	YES	T 40Y 10Y	SP596-000-01
1M43 N 0010C	DG BUILDING HVAC FAN SUCTION AIR TEMPERATURE 596 TEMPERATURE	WEED 4000R TRANSMITTER	DG-1 MILD DGC/02-620	A	A4	J YES	.001 5.00 SEC	YES	T 40Y 10Y	SP596-000-01
1M43 N 0210A	DG BUILDING HVAC FAN SUCTION AIR TEMPERATURE 596 TEMPERATURE	WEED 4000R TRANSMITTER	DG-1 MILD DGC/02-620	A	A4	J YES	.001 5.00 SEC	YES	T 40Y 10Y	SP596-000-01
1M43 N 0210B	DG BUILDING HVAC FAN SUCTION AIR TEMPERATURE 596 TEMPERATURE	WEED 4000R TRANSMITTER	DG-1 MILD DGA/02-620	A	A4	J YES	.001 5.00 SEC	YES	T 40Y 10Y	SP596-000-01
1M43 N 0210C	DG BUILDING HVAC FAN SUCTION AIR TEMPERATURE 596 TEMPERATURE	WEED 4000R TRANSMITTER	DG-1 MILD DGB/02-620	A	A4	J YES	.001 5.00 SEC	YES	T 40Y 10Y	SP596-000-01
1P42 N 0050A	EMERGENCY CLOSED COOLING HEAT EXCHANGER- P42B001A 596 RESISTANCE TEMPERA- TURE DETECTOR	WEED 612-1A-C-4-C-11.5-00	CB-5 MILD CCD/04-574	A	A4	J YES	.001 5.00 SEC	YES	T 40Y 40Y	SP596-000-01
1P42 N 0050B	EMERGENCY CLOSED COOLING HEAT EXCHANGER- P42B001B 596 RESISTANCE TEMPERA- TURE DETECTOR	WEED 612-1A-C-4-C-11.5-00	CB-5 MILD CCD/05-574	A	A4	J YES	.001 5.00 SEC	YES	T 40Y 40Y	SP596-000-01
1P42 N 0052A	EMERGENCY CLOSED COOLING HEAT EXCHANGER- P42B001A 596 TEMPERATURE	WEED 4000R TRANSMITTER	CB-5 MILD CCD/04-574	A	A4	J YES	.001 5.00 SEC	YES	T 40Y 15Y	SP596-000-01

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP596-000-01 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP596-000-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1P42 N 0052B	EMERGENCY CLOSED COOLING WATER		WEED	CB-5	A	A4	J	YES	.001		YES	T	40Y	SP596-000-01
	HEAT EXCHANGER- P42B001B		4000R	MILD					5.00	SEC			15Y	
	596	TEMPERATURE	TRANSMITTER	CCD/04-574										
1P45 N 0088A	EMERGENCY SERVICE WATER		WEED	ES-W	A	A4	J	YES	.001		YES	T	40Y	SP596-000-01
	"A" LOOP PUMP DISCH		612-1A-C-4-C-14.5-00	MILD					5.00	SEC			40Y	
	596	RESISTANCE TEMPERA-	TURE DETECTOR	EWD/05-586										
1P45 N 0088B	EMERGENCY SERVICE WATER		WEED	ES-W	A	A4	J	YES	.001		YES	T	40Y	SP596-000-01
	"B" LOOP PUMP DISCH		612-1A-C-4-C-14.5-00	MILD					5.00	SEC			40Y	
	596	RESISTANCE TEMPERA-	TURE DETECTOR	EWD/03-586										
1P45 N 0090A	EMERGENCY SERVICE WATER		WEED	ES-W	A	A4	J	YES	.001		YES	T	40Y	SP596-000-01
	"A" LOOP PUMP DISCH		4000R	MILD					5.00	SEC			28Y	
	596	TEMPERATURE	TRANSMITTER	EWC/01-586										
1P45 N 0090B	EMERGENCY SERVICE WATER		WEED	ES-W	A	A4	J	YES	.001		YES	T	40Y	SP596-000-01
	"B" LOOP PUMP DISCH		4000R	MILD					5.00	SEC			28Y	
	596	TEMPERATURE	TRANSMITTER	EWC/01-586										

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-597-00-02
MANUFACTURER'S QUALIFICATION REPORT NO. 2375 REV. C
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Solenoid Valves Including Position Switch
MANUFACTURER/MODEL NO. Target Rock/77JJ-001, 002, 003, 004, 006
TESTED DEVICE MODEL NO. 77CC-001

AGING SUMMARY

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-4	147°F	13½ Hours
AVERAGE	AB-4	101°F	336,992 Hours
MINIMUM	CT-3	62°F	3,221 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-2	154°F	49 Hours
RADIATION DOSE (RADS, TID)	AB-2	6.2×10^5 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 350°F/33 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/20 Years
LIFE-LIMITING COMPONENT Coil
TEST RADIATION DOSE (TID) 1.227×10^8 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Functionally Tested During and After LOCA Test
FUNCTION TIME (FT)	J (180 Days)	14 Days of LOCA Test Extrapolated to 180 Days by Analysis
ACCURACY (ACC) (4)	(N/A)	N/A
RESPONSE TIME (RT)	.25 Seconds	3 Seconds (Note 7)

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-9	217°F	385°F	168°F
PRESSURE (PSIG)	CT-3	12 PSIG	66 PSIG	54 PSIG
R.H. (%)	AB-9	100%	100%	N/A
SPRAY	CT-7	Demineralized Water	Boron in form of H_3BO_3	N/A
SUBMERGENCE	CT-3	Demineralized Water	(Note 6)	N/A
RADIATION (RADS)	AB-4 (Note 5)	4.1×10^7 Rads	1×10^8 Rads (2)	>10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV. NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 3/16/84
CHECKED BY Eddie B. Thomas Jr. 3-17-84
APPROVED BY [illegible] 3/20/84

QUALIFICATION SUMMARY (FILE NO.) SP-597-00-02

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   See attached position paper "Impact of Qualification on Instrument Accuracy Requirements."

5. Deterioration for beta radiation, in CT-3, is prevented by the metal flange holding the gasket in compression; therefore, the anticipated damage is not a failure mode. The above value excludes beta dose.

6. The only instruments that will be subjected to submergence are 1D17F0079B and 1D17N0079B. Those instruments are not needed once they do their safety function at the beginning of the LOCA.

7. The 3-seconds response time is acceptable for Perry application.

IMPACT OF QUALIFICATION TEST RESULTS ON INSTRUMENT ACCURACY REQUIREMENTS

This document discusses the establishment of instrument accuracy and response time requirements. It maintains that the performance specifications established by the instrument manufacturer will in the majority of situations adequately meet the requirements of the application. Under harsh environments instrument performance may degrade beyond the normal specification limits. When this occurs, the instrument applications must be reexamined to evaluate the effects on the process requirements.

Establishing Performance Requirements

In the early phase of the design process a system engineer coordinates the selection of instrumentation with the procurement engineer to meet the performance requirements of the system. For the majority of situations, this effort utilizes the specified catalog accuracy and the design is slanted by this pre-knowledge of what the instrumentation is capable of achieving (under normal operation).

In a few cases, a critical performance requirement is identified early in the design process and the equipment is then specified to meet this requirement.

Typically, a concern with the instrument meeting its intended function is likely to occur at some point later. These cases, such as a change in process condition or setpoint, an instrument elevation change or adding a new functional requirement, results in the instrument application being examined on a case-by-case basis. Rarely does this require procurement of a new instrument, and the existing device can be demonstrated to be adequate. The concept of using manufacturer's accuracy as a system requirement is, therefore, justified on the basis of this experience.

Evaluating Accuracy/Response Time Requirement

Specific requirements within the regulations for accuracy/response time are not common. R.G. 1.97 does provide accuracy requirements (factor of 2) for radiation monitoring equipment i.e, Note 7 is applicable to SP621 and Note 9 applies to SP622 equipment. The manufacturer's accuracy for this equipment meets these requirements.

FSAR Table 6.2.32 although listing isolation valve closure times reflects the design basis but doesn't establish it for closure time. Here again catalog response time is used for SP597 valves; however, in most cases this figure isn't significant because many valves are either normally closed or under remote manual control.

When the qualification accuracy is demonstrated to be worse than the catalog (or specified) accuracy then the disparity must be examined and resonciled.

The evaluation of the Post Accident Monitoring (PAM) transmitter which you have is one approach on a generic basis for an analog loop application.

Another example occurred recently during review of the Barton (SP598) report: The attached memo identifies the concern. While the details of final resolution have to be worked out, it appears possible to remedy extreme accuracy perturbations which occur during the harsh environment. One method is to account for these inaccuracies in establishing the process analytical limit before calculating the instrument setpoint. These cases must be evaluated individually to identify the critical parameters.

In other instances, the disagreements between required and demonstrated accuracy or response time are relatively minor and these adjustments can be evaluated with little effort.

Reviewing Results

Generally required system accuracy will be equivalent to catalog accuracy. Under normal or abnormal operation condition this figure is still valid. For harsh condition some instruments will require only minor adjustments to the required system accuracy. Certain devices, however, will require a more detailed analysis to demonstrate the instrument's performance is adequate for its intended application.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP597-000-02 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP597-000-02

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME	ACC/RT DEMO	QUALIFICATION M	LF/MI	SUMMARY
1D17 F 0079A	PLANT RADIATION MONITORING SYSTEM		TARGET ROCK	FB-2	A	A4	A	YES	N/A		YES	C	40Y	SP597-000-02
	OUTBOARD ISOLATION VLV		77JJ-004	MILD						0.25 SEC			20Y	
	597	SOLENOID VALVE		IBB/07-620										
1D17 F 0079B	PLANT RADIATION MONITORING SYSTEM		TARGET ROCK	CT-3	A	A1	A	YES	N/A		YES	C	40Y	SP597-000-02
	INBOARD ISOLATION VLV		77JJ-004	HARSH						0.25 SEC			20Y	
	597	SOLENOID VALVE		C 0/08-620				YES						
1D17 F 0089A	PLANT RADIATION MONITORING SYSTEM		TARGET ROCK	FB-4	A	A4	A	YES	N/A		YES	C	40Y	SP597-000-02
	OUTBOARD ISOLATION VLV		77JJ-004	MILD						0.25 SEC			20Y	
	597	SOLENOID VALVE		IBF/06-665										
1D17 F 0089B	PLANT RADIATION MONITORING SYSTEM		TARGET ROCK	CT-7	A	A1	A	YES	N/A		YES	C	40Y	SP597-000-02
	INBOARD ISOLATION VLV		77JJ-004	HARSH						0.25 SEC			20Y	
	597	SOLENOID VALVE		C 0/11-664				YES						
1D17 N 0079A	PLANT RADIATION MONITORING SYSTEM		TARGET ROCK	FB-2	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VLV F079A		77JJ-004	MILD						N/A			20Y	
	597	POSITION SWITCH		IBB/07-620										
1D17 N 0079B	PLANT RADIATION MONITORING SYSTEM		TARGET ROCK	CT-3	A	A1	J	YES	N/A		YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VLV F079B		77JJ-004	HARSH						N/A			20Y	
	597	POSITION SWITCH		C 0/08-620				YES	H2					
1D17 N 0089A	PLANT RADIATION MONITORING SYSTEM		TARGET ROCK	FB-4	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VLV F089A		77JJ-004	MILD						N/A			20Y	
	597	POSITION SWITCH		IBF/06-665										
1D17 N 0089B	PLANT RADIATION MONITORING SYSTEM		TARGET ROCK	CT-7	A	A1	J	YES	N/A		YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VLV F089B		77JJ-004	HARSH						N/A			20Y	
	597	POSITION SWITCH		C 0/11-664				YES	H2					
1D23 F 0010A	CONTAINMENT ATMOSPHERE MONITORING		TARGET ROCK	AB-9	A	A2	J	YES	N/A		YES	C	40Y	SP597-000-02
	SUPP POOL MAKEUP		77JJ-001	HARSH						0.25 SEC			20Y	
	597	SOLENOID VALVE		AXD/02-599				YES						
1D23 F 0010B	CONTAINMENT ATMOSPHERE MONITORING		TARGET ROCK	FB-4	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	SUPP POOL MAKEUP		77JJ-001	MILD						0.25 SEC			20Y	
	597	SOLENOID VALVE		IBA/02-654										
1D23 F 0020A	CONTAINMENT ATMOSPHERE MONITORING		TARGET ROCK	AB-9	A	A2	J	YES	N/A		YES	C	40Y	SP597-000-02
	INST RT PT-N022A		77JJ-001	HARSH						0.25 SEC			20Y	
	597	SOLENOID VALVE		AXD/02-599				YES						

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP597-000-02 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP597-000-02

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES TME H2/H2	ACC/RT DEMO	M	LF/MI	QUALIFICATION SUMMARY
1D23 F 0020B	CONTAINMENT ATMOSPHERE MONITORING INST RT PT-N022B 597	SOLENOID VALVE	TARGET ROCK 77JJ-001	FB-4 MILD IBA/02-654	A	A4	J	YES	N/A 0.25 SEC	YES	C	40Y 20Y	SP597-000-02
1D23 F 0030A	CONTAINMENT ATMOSPHERE MONITORING 4084301 597	SOLENOID VALVE	TARGET ROCK 77JJ-001	AB-9 HARSH AXD/02-599	A	A2	J	YES YES	N/A 0.25 SEC	YES	C	40Y 20Y	SP597-000-02
1D23 F 0030B	CONTAINMENT ATMOSPHERE MONITORING INST RT PT-N032B 597	SOLENOID VALVE	TARGET ROCK 77JJ-001	FB-4 MILD IBA/02-654	A	A4	J	YES	N/A 0.25 SEC	YES	C	40Y 20Y	SP597-000-02
1D23 F 0040A	CONTAINMENT ATMOSPHERE MONITORING INST RT PT-N042A,PT-N043A, 597	SOLENOID VALVE	TARGET ROCK 77JJ-001	AB-9 HARSH AXD/02-599	A	A2	J	YES YES	N/A 0.25 SEC	YES	C	40Y 20Y	SP597-000-02
1D23 F 0040B	CONTAINMENT ATMOSPHERE MONITORING INST RT PT-N042B,PT-N043B, 597	SOLENOID VALVE	TARGET ROCK 77JJ-001	FB-4 MILD IBA/02-654	A	A4	J	YES	N/A 0.25 SEC	YES	C	40Y 20Y	SP597-000-02
1D23 F 0050	CONTAINMENT ATMOSPHERE MONITORING SUPP POOL MAKEUP 597	SOLENOID VALVE	TARGET ROCK 77JJ-001	AB-4 HARSH AXD/02-599	A	A2	J	YES YES	N/A 0.25 SEC	YES	C	40Y 20Y	SP597-000-02
1D23 N 0011A	CONTAINMENT ATMOSPHERE MONITORING POSITION SWITCH FOR VLV F010A 597	POSITION SWITCH	TARGET ROCK 77JJ-001	AB-9 HARSH AXD/02-599	A	A2	J	YES YES	N/A N/A	YES	C	40Y 20Y	SP597-000-02
1D23 N 0011B	CONTAINMENT ATMOSPHERE MONITORING POSITION SWITCH FOR VLV F010B 597	POSITION SWITCH	TARGET ROCK 77JJ-001	FB-4 MILD AXD/02-599	A	A4	J	YES	N/A N/A	YES	C	40Y 20Y	SP597-000-02
1D23 N 0021A	CONTAINMENT ATMOSPHERE MONITORING POSITION SWITCH FOR VLV F020A 597	POSITION SWITCH	TARGET ROCK 77JJ-001	AB-9 HARSH AXD/02-599	A	A2	J	YES YES	N/A N/A	YES	C	40Y 20Y	SP597-000-02
1D23 N 0021B	CONTAINMENT ATMOSPHERE MONITORING POSITION SWITCH FOR VLV F020B 597	POSITION SWITCH	TARGET ROCK 77JJ-001	FB-4 MILD AXD/02-599	A	A4	J	YES	N/A N/A	YES	C	40Y 20Y	SP597-000-02
1D23 N 0031A	CONTAINMENT ATMOSPHERE MONITORING POSITION SWITCH FOR VLV F030A 597	POSITION SWITCH	TARGET ROCK 77JJ-001	AB-9 HARSH AXD/02-599	A	A2	J	YES YES	N/A N/A	YES	C	40Y 20Y	SP597-000-02

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP597-000-02 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP597-000-02

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD	EC CAT ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1D23 N 0031B	CONTAINMENT ATMOSPHERE MONITORING POSITION SWITCH FOR VLV F030B 597 POSITION SWITCH	TARGET ROCK 77JJ-001	FB-4 MILD AXD/02-599	A	A4	J	YES	N/A N/A	YES	C	40Y 20Y	SP597-000-02
1D23 N 0041A	CONTAINMENT ATMOSPHERE MONITORING POSITION SWITCH FOR VLV F040A 597 POSITION SWITCH	TARGET ROCK 77JJ-001	AB-9 HARSH AXD/02-599	A	A2	J	YES YES	N/A N/A	YES	C	40Y 20Y	SP597-000-02
1D23 N 0041B	CONTAINMENT ATMOSPHERE MONITORING POSITION SWITCH FOR VLV F040B 597 POSITION SWITCH	TARGET ROCK 77JJ-001	FB-4 MILD AXD/02-599	A	A4	J	YES	N/A N/A	YES	C	40Y 20Y	SP597-000-02
1D23 N 0051	CONTAINMENT ATMOSPHERE MONITORING POSITION SWITCH FOR VLV F050 597 POSITION SWITCH	TARGET ROCK 77JJ-001	AB-4 HARSH AXD/02-599	A	A2	J	YES YES	N/A N/A	YES	C	40Y 20Y	SP597-000-02
1E12 F 0060A	RESIDUAL HEAT REMOVAL SYSTEM RHR HX OUTLET LOCAL SAPMLE CON 597 SOLENOID VALVE	TARGET ROCK 77JJ-006	AB-4 HARSH AXC/06-574	A	A2	J	YES YES	N/A 0.25 SEC	YES	C	40Y 20Y	SP597-000-02
1E12 F 0060B	RESIDUAL HEAT REMOVAL SYSTEM RHR HX OUTLET LOCAL SAPMLE CON 597 SOLENOID VALVE	TARGET ROCK 77JJ-006	AB-4 HARSH AXC/04-574	A	A2	J	YES YES	N/A 0.25 SEC	YES	C	40Y 20Y	SP597-000-02
1E12 F 0075A	RESIDUAL HEAT REMOVAL SYSTEM RHR HX OUTLET LOCAL SAMPLE CON 597 SOLENOID VALVE	TARGET ROCK 77JJ-006	AB-9 HARSH AXB/07-599	A	A2	J	YES YES	N/A 0.25 SEC	YES	C	40Y 20Y	SP597-000-02
1E12 F 0075B	RESIDUAL HEAT REMOVAL SYSTEM RHR HX OUTLET LOCAL SAMPLE CON 597 SOLENOID VALVE	TARGET ROCK 77JJ-006	AB-9 HARSH AXC/03-599	A	A2	J	YES YES	N/A 0.25 SEC	YES	C	40Y 20Y	SP597-000-02
1E12 N 0061A	RESIDUAL HEAT REMOVAL SYSTEM LIMIT SWITCH FOR VLV F060A 597 POSITION SWITCH	TARGET ROCK 77JJ-006	AB-4 HARSH AXC/06-574	A	A2	J	YES YES	N/A N/A	YES	C	40Y 20Y	SP597-000-02
1E12 N 0061B	RESIDUAL HEAT REMOVAL SYSTEM LIMIT SWITCH FOR VLV F060B 597 POSITION SWITCH	TARGET ROCK 77JJ-006	AB-4 HARSH AXC/06-574	A	A2	J	YES YES	N/A N/A	YES	C	40Y 20Y	SP597-000-02
1E12 N 0076A	RESIDUAL HEAT REMOVAL SYSTEM LIMIT SWITCH FOR VLV F075A 597 POSITION SWITCH	TARGET ROCK 77JJ-006	AB-9 HARSH AXC/06-574	A	A2	J	YES YES	N/A N/A	YES	C	40Y 20Y	SP597-000-02

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP597-000-02 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP597-000-02

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1E12 N 0076B	RESIDUAL HEAT REMOVAL SYSTEM		TARGET ROCK	AB-9	A	A2	J	YES	N/A		YES	C 40Y	SP597-000-02
	LIMIT SWITCH FOR VLV F075B		77JJ-006	HARSH						N/A		20Y	
	597	POSITION SWITCH		AXC/06-574				YES					
1G43 F 0050A	SUPPRESSION POOL MAKE-UP SYSTEM		TARGET ROCK	AB-4	A	A2	J	YES	N/A		YES	C 40Y	SP597-000-02
	SUPPRESSION POOL LEVEL TRANSMI		77JJ-003	HARSH						0.25 SEC		20Y	
	597	SOLENOID VALVE		AXB/07-574				YES					
1G43 F 0050B	SUPPRESSION POOL MAKE-UP SYSTEM		TARGET ROCK	AB-4	A	A2	J	YES	N/A		YES	C 40Y	SP597-000-02
	SUPPRESSION POOL LEVEL TRANSMI		77JJ-003	HARSH						0.25 SEC		20Y	
	597	SOLENOID VALVE		AXC/02-574				YES					
1G43 F 0060	SUPPRESSION POOL MAKE-UP SYSTEM		TARGET ROCK	AB-2	A	A2	J	YES	N/A		YES	C 40Y	SP597-000-02
	SUPPRESSION POOL LEVEL TRANSMI		77JJ-003	HARSH						0.25 SEC		20Y	
	597	SOLENOID VALVE		AXD/02-574				YES					
1G43 N 0051A	SUPPRESSION POOL MAKE-UP SYSTEM		TARGET ROCK	AB-4	A	A2	J	YES	N/A		YES	C 40Y	SP597-000-02
	POSITION SWITCH FOR VLV F050A		77JJ-003	HARSH						N/A		20Y	
	597	POSITION SWITCH		AXB/07-574				YES					
1G43 N 0051B	SUPPRESSION POOL MAKE-UP SYSTEM		TARGET ROCK	AB-4	A	A2	J	YES	N/A		YES	C 40Y	SP597-000-02
	POSITION SWITCH FOR VLV F050B		77JJ-003	HARSH						N/A		20Y	
	597	POSITION SWITCH		AXC/02-574				YES					
1G43 N 0061	SUPPRESSION POOL MAKE-UP SYSTEM		TARGET ROCK	AB-2	A	A2	J	YES	N/A		YES	C 40Y	SP597-000-02
	POSITION SWITCH FOR VLV F060		77JJ-003	HARSH						N/A		20Y	
	597	POSITION SWITCH		AXD/02-574				YES					
1M17 F 0055	CONTAINMENT VACUUM RELIEF SYSTEM		TARGET ROCK	AB-9	A	A2	J	YES	N/A		YES	C 40Y	SP597-000-02
	INST. RT. PT-N019,PT-N028		77JJ-001	HARSH						0.25 SEC		20Y	
	597	SOLENOID VALVE		AXD/03-599				YES					
1M17 F 0065	CONTAINMENT VACUUM RELIEF SYSTEM		TARGET ROCK	FB-4	A	A4	J	YES	N/A		YES	C 40Y	SP597-000-02
	INST. RT. PT-N038,PT-N048		77JJ-001	MILD						0.25 SEC		20Y	
	597	SOLENOID VALVE		IBA/03-654									
1M17 N 0056	CONTAINMENT VACUUM RELIEF SYSTEM		TARGET ROCK	AB-9	A	A2	J	YES	N/A		YES	C 40Y	SP597-000-02
	POSITION SWITCH FOR SCV-F055		77JJ-001	HARSH						N/A		20Y	
	597	POSITION SWITCH		AXD/03-599				YES					
1M17 N 0066	CONTAINMENT VACUUM RELIEF SYSTEM		TARGET ROCK	FB-4	A	A4	J	YES	N/A		YES	C 40Y	SP597-000-02
	POSITION SWITCH FOR SCV-F065		77JJ-001	MILD						N/A		20Y	
	597	POSITION SWITCH		IBA/03-654									

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP597-000-02 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP597-000-02

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	DEMO	M	QUALIFICATION LF/MI	SUMMARY
1M51 F 0210A	COMBUSTIBLE GAS CONTROL SYSTEM HYDROGEN SAMPLE ISOL. 597 SOLENOID VALVE	TARGET ROCK 77JJ-002	AB-4 HARSH AXD/03-620	A	A2	J	YES YES	N/A 0.25 SEC	YES	C	40Y 20Y		SP597-000-02
1M51 F 0210B	COMBUSTIBLE GAS CONTROL SYSTEM HYDROGEN SAMPLE ISOL. 597 SOLENOID VALVE	TARGET ROCK 77JJ-002	FB-4 MILD IBB/02-654	A	A4	J	YES	N/A 0.25 SEC	YES	C	40Y 20Y		SP597-000-02
1M51 F 0220A	COMBUSTIBLE GAS CONTROL SYSTEM HYDROGEN SAMPLE ISOL. 597 SOLENOID VALVE	TARGET ROCK 77JJ-002	AB-4 HARSH AXD/03-620	A	A2	J	YES YES	N/A 0.25 SEC	YES	C	40Y 20Y		SP597-000-02
1M51 F 0220B	COMBUSTIBLE GAS CONTROL SYSTEM HYDROGEN SAMPLE ISOL. 597 SOLENOID VALVE	TARGET ROCK 77JJ-002	FB-4 MILD IBB/02-654	A	A4	J	YES	N/A 0.25 SEC	YES	C	40Y 20Y		SP597-000-02
1M51 F 0230A	COMBUSTIBLE GAS CONTROL SYSTEM HYDROGEN SAMPLE ISOL. 597 SOLENOID VALVE	TARGET ROCK 77JJ-002	AB-4 HARSH AXD/03-620	A	A2	J	YES YES	N/A 0.25 SEC	YES	C	40Y 20Y		SP597-000-02
1M51 F 0230B	COMBUSTIBLE GAS CONTROL SYSTEM HYDROGEN SAMPLE ISOL. 597 SOLENOID VALVE	TARGET ROCK 77JJ-002	FB-4 MILD IBB/02-654	A	A4	J	YES	N/A 0.25 SEC	YES	C	40Y 20Y		SP597-000-02
1M51 F 0240A	COMBUSTIBLE GAS CONTROL SYSTEM HYDROGEN SAMPLE ISOL. 597 SOLENOID VALVE	TARGET ROCK 77JJ-002	AB-4 HARSH AXD/03-620	A	A2	J	YES YES	N/A 0.25 SEC	YES	C	40Y 20Y		SP597-000-02
1M51 F 0240B	COMBUSTIBLE GAS CONTROL SYSTEM HYDROGEN SAMPLE ISOL. 597 SOLENOID VALVE	TARGET ROCK 77JJ-002	FB-4 MILD IBB/02-654	A	A4	J	YES	N/A 0.25 SEC	YES	C	40Y 20Y		SP597-000-02
1M51 F 0250A	COMBUSTIBLE GAS CONTROL SYSTEM HYDROGEN SAMPLE ISOL. 597 SOLENOID VALVE	TARGET ROCK 77JJ-002	AB-4 HARSH AXD/03-620	A	A2	J	YES YES	N/A 0.25 SEC	YES	C	40Y 20Y		SP597-000-02
1M51 F 0250B	COMBUSTIBLE GAS CONTROL SYSTEM HYDROGEN SAMPLE ISOL. 597 SOLENOID VALVE	TARGET ROCK 77JJ-002	FB-4 MILD IBB/02-654	A	A4	J	YES	N/A 0.25 SEC	YES	C	40Y 20Y		SP597-000-02
1M51 F 0260A	COMBUSTIBLE GAS CONTROL SYSTEM EMERGENCY USED COOLING WTR. FR 597 SOLENOID VALVE	TARGET ROCK 77JJ-003	AB-1 MILD AXD/03-620	A	A4	A	YES	N/A 0.25 SEC	YES	C	40Y 20Y		SP597-000-02

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP597-000-02 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP597-000-02

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES TME H2/H2	ACC/RT DEMO DEMO	M	QUALIFICATION LF/MI	SUMMARY
1M51 F 0260B	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	FB-4	A	A4	A	YES	N/A	YES	C	40Y	SP597-000-02
	EMERGENCY USED COOLING WTR. FR	77JJ-003	MILD					0.25 SEC			20Y	
	597 SOLENOID VALVE		IBB/02-654									
1M51 F 0270A	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	AB-1	A	A4	A	YES	N/A	YES	C	40Y	SP597-000-02
	EMERGENCY USED COOLING WTR. FR	77JJ-003	MILD					0.25 SEC			20Y	
	597 SOLENOID VALVE		AXD/03-620									
1M51 F 0270B	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	FB-4	A	A4	A	YES	N/A	YES	C	40Y	SP597-000-02
	EMERGENCY CLOSED COOLING WTR.	77JJ-003	MILD					0.25 SEC			20Y	
	597 SOLENOID VALVE		IBB/02-654									
1M51 N 0211A	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	AB-4	A	A2	J	YES	N/A	YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F210A	77JJ-002	HARSH					N/A			20Y	
	597 POSITION SWITCH		AXD/03-620				YES					
1M51 N 0211B	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	FB-4	A	A4	J	YES	N/A	YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F210B	77JJ-002	MILD					N/A			20Y	
	597 POSITION SWITCH		IBB/02-654									
1M51 N 0221A	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	AB-4	A	A2	J	YES	N/A	YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F220A	77JJ-002	HARSH					N/A			20Y	
	597 POSITION SWITCH		AXD/03-620				YES					
1M51 N 0221B	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	FB-4	A	A4	J	YES	N/A	YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F220B	77JJ-002	MILD					N/A			20Y	
	597 POSITION SWITCH		IBB/02-654									
1M51 N 0231A	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	AB-4	A	A2	J	YES	N/A	YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F230A	77JJ-002	HARSH					N/A			20Y	
	597 POSITION SWITCH		AXD/03-620				YES					
1M51 N 0231B	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	FB-4	A	A4	J	YES	N/A	YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F230B	77JJ-002	MILD					N/A			20Y	
	597 POSITION SWITCH		IBB/02-654									
1M51 N 0241A	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	AB-4	A	A2	J	YES	N/A	YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F240A	77JJ-002	HARSH					N/A			20Y	
	597 POSITION SWITCH		AXD/03-620				YES					
1M51 N 0241B	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	FB-4	A	A4	J	YES	N/A	YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F240B	77JJ-002	MILD					N/A			20Y	
	597 POSITION SWITCH		IBB/02-654									

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP597-000-02 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP597-000-02

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1M51 N 0251A	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	AB-4	A	A2	J	YES	N/A		YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F250A	77JJ-002	HARSH					N/A				20Y	
	597 POSITION SWITCH		AXD/03-620				YES						
1M51 N 0251B	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	FB-4	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F250B	77JJ-002	MILD					N/A				20Y	
	597 POSITION SWITCH		IBB/02-654										
1M51 N 0261A	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	AB-1	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F260A	77JJ-003	MILD					N/A				20Y	
	597 POSITION SWITCH		AXD/03-620										
1M51 N 0261B	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	FB-4	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F260B	77JJ-003	MILD					N/A				20Y	
	597 POSITION SWITCH		IBB/02-654										
1M51 N 0271A	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	AB-1	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F270A	77JJ-003	MILD					N/A				20Y	
	597 POSITION SWITCH		AXD/03-620										
1M51 N 0271B	COMBUSTIBLE GAS CONTROL SYSTEM	TARGET ROCK	FB-4	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	POSITION SWITCH FOR VALVE F270B	77JJ-003	MILD					N/A				20Y	
	597 POSITION SWITCH		IBB/02-654										
1P53 F 0030	PENETRATION PRESSURIZATION SYSTEM	TARGET ROCK	FB-1	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	AEGTS LEAKAGE BYPASS ISOL VLV	77JJ-001	MILD						0.25 SEC			20Y	
	597 SOLENOID VALVE		IBD/04-599										
1P53 F 0035	PENETRATION PRESSURIZATION SYSTEM	TARGET ROCK	FB-1	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	AEGTS LEAKAGE BYPASS ISOL VLV	77JJ-001	MILD						0.25 SEC			20Y	
	597 SOLENOID VALVE		IBD/04-599										
1P53 F 0040	PENETRATION PRESSURIZATION SYSTEM	TARGET ROCK	FB-4	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	AEGTS LEAKAGE BYPASS ISOL VLV	77JJ-001	MILD						0.25 SEC			20Y	
	597 SOLENOID VALVE		IBF/05-682										
1P53 F 0045	PENETRATION PRESSURIZATION SYSTEM	TARGET ROCK	FB-4	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	AEGTS LEAKAGE BYPASS ISOL VLV	77JJ-001	MILD						0.25 SEC			20Y	
	597 SOLENOID VALVE		IBF/05-682										
1P53 N 0032	PENETRATION PRESSURIZATION SYSTEM	TARGET ROCK	FB-1	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	LIMIT SWITCH FOR VLV F030	77JJ-001	MILD					N/A				20Y	
	597 POSITION SWITCH		IBD/04-599										

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP597-000-02 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP597-000-02

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1P53 N 0037	PENETRATION PRESSURIZATION SYSTEM	TARGET ROCK	FB-1	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	LIMIT SWITCH FOR VLV F035	77JJ-001	MILD					N/A				20Y	
	597 POSITION SWITCH		IBD/04-599										
1P53 N 0042	PENETRATION PRESSURIZATION SYSTEM	TARGET ROCK	FB-4	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	LIMIT SWITCH FOR VLV F040	77JJ-001	MILD					N/A				20Y	
	597 POSITION SWITCH		IBD/04-599										
1P53 N 0047	PENETRATION PRESSURIZATION SYSTEM	TARGET ROCK	FB-4	A	A4	J	YES	N/A		YES	C	40Y	SP597-000-02
	LIMIT SWITCH FOR VLV F045	77JJ-001	MILD					N/A				20Y	
	597 POSITION SWITCH		IBD/04-599										

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-598-00
MANUFACTURER'S QUALIFICATION REPORT NO. Test Plan 9999.3083.2 REV. 6
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Level Switch/Differential Pressure Switch
MANUFACTURER/MODEL NO. Barton/580A-1
TESTED DEVICE MODEL NO. 580

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-3	130°F	8,408 Hours
AVERAGE	FB-3	119°F	333,440 Hours
MINIMUM	FB-3	90°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F): Loss of HVAC	FB-3	141/130°F	49 Hours
RADIATION DOSE (RADS, TID)	FB-3	8.8×10^2 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 121.1°C/1,440 Hours (Test Plan)
QUALIFIED LIFE/MAINTENANCE INTERVAL 20 Years (Test Plan)
LIFE-LIMITING COMPONENT
TEST RADIATION DOSE (TID) 2.0×10^8 Normal & Accident (Test Plan) (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A2	Monitor during test (Test Plan)
FUNCTION TIME (FT)	J (180 Days)	100 Days (Test Plan)
ACCURACY (ACC) (4)	See Attached Memo and Position Paper	
RESPONSE TIME (RT)	See Attached Memo and Position Paper	

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	FB-3	150°F	340°F (Test Plan)	190
PRESSURE (PSIG)	FB-3	Atmos.		
R.H. (%)	FB-3	90		N/A
SPRAY	N/A	N/A	24 Hours (Test Plan)	N/A
SUBMERGENCE	N/A	N/A		N/A
RADIATION (RADS)	FB-3	4.16×10^2	2.0×10^8 (Test Plan) (2)	

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 1/30/84
CHECKED BY Eddie B. Thomas Jr. 12-21-84
APPROVED BY [illegible] 12/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-598-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) * 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   See attached position paper "Impact of Qualification on Instrument Accuracy Requirements."

5. Demonstrated values are derived from test plan. Test and review of Barton's switches is expected to be completed February 29, 1984.

IMPACT OF QUALIFICATION TEST RESULTS ON INSTRUMENT ACCURACY REQUIREMENTS

This document discusses the establishment of instrument accuracy and response time requirements. It maintains that the performance specifications established by the instrument manufacturer will in the majority of situations adequately meet the requirements of the application. Under harsh environments instrument performance may degrade beyond the normal specification limits. When this occurs, the instrument applications must be reexamined to evaluate the effects on the process requirements.

Establishing Performance Requirements

In the early phase of the design process a system engineer coordinates the selection of instrumentation with the procurement engineer to meet the performance requirements of the system. For the majority of situations, this effort utilizes the specified catalog accuracy and the design is slanted by this pre-knowledge of what the instrumentation is capable of achieving (under normal operation).

In a few cases, a critical performance requirement is identified early in the design process and the equipment is then specified to meet this requirement.

Typically, a concern with the instrument meeting its intended function is likely to occur at some point later. These cases, such as a change in process condition or setpoint, an instrument elevation change or adding a new functional requirement, results in the instrument application being examined on a case-by-case basis. Rarely does this require procurement of a new instrument, and the existing device can be demonstrated to be adequate. The concept of using manufacturer's accuracy as a system requirement is, therefore, justified on the basis of this experience.

Evaluating Accuracy/Response Time Requirement

Specific requirements within the regulations for accuracy/response time are not common. R.G. 1.97 does provide accuracy requirements (factor of 2) for radiation monitoring equipment i.e, Note 7 is applicable to SP621 and Note 9 applies to SP622 equipment. The manufacturer's accuracy for this equipment meets these requirements.

FSAR Table 6.2.32 although listing isolation valve closure times reflects the design basis but doesn't establish it for closure time. Here again catalog response time is used for SP597 valves; however, in most cases this figure isn't significant because many valves are either normally closed or under remote manual control.

When the qualification accuracy is demonstrated to be worse than the catalog (or specified) accuracy then the disparity must be examined and resonciled.

The evaluation of the Post Accident Monitoring (PAM) transmitter which you have is one approach on a generic basis for an analog loop application.

Another example occurred recently during review of the Barton (SP598) report: The attached memo identifies the concern. While the details of final resolution have to be worked out, it appears possible to remedy extreme accuracy perturbations which occur during the harsh environment. One method is to account for these inaccuracies in establishing the process analytical limit before calculating the instrument setpoint. These cases must be evaluated individually to identify the critical parameters.

In other instances, the disagreements between required and demonstrated accuracy or response time are relatively minor and these adjustments can be evaluated with little effort.

Reviewing Results

Generally required system accuracy will be equivalent to catalog accuracy. Under normal or abnormal operation condition this figure is still valid. For harsh condition some instruments will require only minor adjustments to the required system accuracy. Certain devices, however, will require a more detailed analysis to demonstrate the instrument's performance is adequate for its intended application.

memorandum **Gilbert/Commonwealth**

January 24, 1984

to: M. F. Gaballa

from: R. P. McCarty

subject: Perry Nuclear Power Plant
SP-598 Instrument Setpoint Shift

The following is provided in response to your question concerning the acceptability of the Barton Model 580A-1 setpoint and indication shift following seismic testing and radiation exposure. Test results considered are presented on a table on page 2 of document R3-X759-7 (Appendix II, Section D). These results follow accelerated aging, pressure cycling, radiation exposure and seismic testing.

The instruments of interest are:

OG41 N369A&B	Surge Tank Pump Interlock
OP49 N040A&B	Screen Wash Water Interlock

The G41N369 switches trip the fuel pool circulating pumps when there is approximately 500 gallons left in the surge tanks. The surge tanks are 7500 gallon tanks with a volume of 31.33 gal/inch. These instruments are 0-30" H_2O instruments with a nominal setpoint of 14". A setpoint shift of 9% F.S. is 2.7 inches resulting in a change of 85 gallons. A setpoint shift of this magnitude can be accommodated for this application. The setpoint is non-critical and there is a large volume of water available for setpoint compensation.

The P49N040 switches are screen wash water pressure interlocks which must be satisfied before the emergency service water traveling screens are allowed to operate. Since the screen wash water is an on-off system, without pressure or flow modulation, the pressure interlock serves to indicate that the system is running. These switches are 0-120 psig switches with a nominal setpoint of 100 psig. A 9% F.S. shift is 11 psig. This shift can be accommodated in the final setpoint determination and is acceptable.

Indication shift is acceptable for both switches. Local indication is provided for operator convenience and is not essential to any operation.

R P McCarty

RPM:mlc

cc: S. M. Gresdo
W. P. Nunn
J. E. Tobolski
J. S. Smith

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E598 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP598-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT OPER DEMO SEAL	ACC RES TME H2/H2	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
OC41 N 0415A	STANDBY LIQUID CONTROL SYSTEM	BARTON	FB-4	C	A4	J	N/A		A	
	SLC TRANSFER TANK LEVEL	580A-1	MILD				N/A			
	598 LEVEL SWITCH		IBI/06-620							
OC41 N 0415B	STANDBY LIQUID CONTROL SYSTEM	BARTON	FB-4	C	A4	J	N/A		A	
	SLC TRANSFER TANK LEVEL	580A-1	MILD				N/A			
	598 LEVEL SWITCH		IBI/06-620							
OG41 N 0369A	FUEL POOL COOLING AND CLEAN-UP	ITT BARTON	FB-3	C	A2	J LATER	N/A	LATER	T	
	SURGE TANK A PUMP INTERLOCK	580A-1	HARSH				N/A			
	598 INDICATING DIFF PRESSURE SWITCH		IBG/07-574							
OG41 N 0369B	FUEL POOL COOLING AND CLEAN-UP	ITT BARTON	FB-3	C	A2	J LATER	N/A	LATER	T	
	SURGE TANK B PUMP INTERLOCK	580A-1	HARSH				N/A			
	598 INDICATING DIFF PRESSURE SWITCH		IBJ/07-574							
OP49 N 0040A	EMERGENCY SERVICE WATER SCREEN WASH	BARTON	ES-W	C	A4	J LATER	N/A	LATER	T	
	PUMP HOUSE INTAKE SCREEN	580A-1	MILD				N/A			
	598 INDICATING DIFF PRESSURE SWITCH		EWB/04-586							
OP49 N 0040B	EMERGENCY SERVICE WATER SCREEN WASH	BARTON	ES-W	C	A4	J LATER	N/A	LATER	T	
	PUMP HOUSE INTAKE SCREEN	580A-1	MILD				N/A			
	598 INDICATING DIFF PRESSURE SWITCH		EWB/03-586							

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-604-000-03
MANUFACTURER'S QUALIFICATION REPORT NO. 108025 REV. A
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Transmitter
MANUFACTURER/MODEL NO. Rosemount/1153 Series B (Note 5)
TESTED DEVICE MODEL NO. 1153 Series B

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-4	132°F	8,408 Hours
AVERAGE	FB-3	119°F	333,440 Hours
MINIMUM	DG-1	40°F	3,449 Hours
ABNORMAL TEMP. TRANSIENTS (°F): Loss of HVAC	FB-1	142°F	49 Hours
RADIATION DOSE (RADS, TID)	AB-4	3×10^5 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 203°F/47 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 4.68 Years/None
LIFE-LIMITING COMPONENT Metal Film Resistors and Cermet Potentiometers
TEST RADIATION DOSE (TID) 2.44×10^7 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Output Recorded during Steam/Temperature Test
FUNCTION TIME (FT)	J (180 Days)	56-Hour Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	(Note 4)	± 8% Post-LOCA ± 8% After Radiation
RESPONSE TIME (RT)	0.20 Seconds	0.2 Seconds

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-9	217°F	318°F	101
PRESSURE (PSIG)	CT-3	12 PSIG	73 PSIG	61 PSIG
R.H. (%)	AB-9	100%	100%	N/A
SPRAY	CT-3	Water Spray	Water Spray	N/A
SUBMERGENCE	CT-3	N/A Note 8		N/A
RADIATION (RADS)	AB-4, CT-3	6×10^6 Rads (Note 6&7(	2.39×10^7 Rads (2)	> 10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY Claude Gosch (GAI) 12/1/84
CHECKED BY E.B. Thomas Jr 12-3-84
APPROVED BY [illegible] 12/6/84

QUALIFICATION SUMMARY (FILE NO.) SP-604-000-03

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   System accuracy requirements were re-evaluated for acceptability of demonstrated values and found acceptable (see PAM transmitter analysis).

5. All models used in Perry are considered to be qualified by similarity to the tested model.

6. Based on point specific calculation.

7. Only O-ring is subject to beta radiation which is qualified to 5×10^7 Rads.

8. Instrument located inside containment is above the flood level.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES TME H2/H2 DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1B21 N 0044C	NUCLEAR BOILER REACTOR VESSEL LEVEL 604 LEVEL TRANSMITTER	ROSEMOUNT 1153DB5PAN0016	CT-3 HARSH C 0/06-620	A	A1	J	YES YES	.003 0.20 SEC H2	YES	T 10Y 10Y	SP604-000-03
1B21 N 0044D	NUCLEAR BOILER REACTOR VESSEL LEVEL 604 LEVEL TRANSMITTER	ROSEMOUNT 1153DB5PAN0016	CT-3 HARSH C 0/16-620	A	A1	J	YES YES	.003 0.20 SEC H2	YES	T 10Y 10Y	SP604-000-03
1B21 N 0073C	NUCLEAR BOILER SYSTEM REACTOR VESSEL LEVEL 604 LEVEL TRANSMITTER	ROSEMOUNT 1153DB5PAN0016	CT-3 HARSH C 0/07-620	A	A1	I	YES YES	.003 0.20 SEC H2	YES	T 10Y 10Y	SP604-000-03
1B21 N 0073G	NUCLEAR BOILER SYSTEM REACTOR VESSEL LEVEL 604 LEVEL TRANSMITTER	ROSEMOUNT 1153DB5PAN0016	CT-3 HARSH C 0/07-620	A	A1	I	YES YES	.003 0.20 SEC H2	YES	T 10Y 10Y	SP604-000-03
1B21 N 0073L	NUCLEAR BOILER SYSTEM REACTOR VESSEL LEVEL 604 LEVEL TRANSMITTER	ROSEMOUNT 1153DB5PAN0016	CT-3 HARSH C 0/16-620	A	A1	I	YES YES	.003 0.20 SEC H2	YES	T 10Y 10Y	SP604-000-03
1B21 N 0073R	NUCLEAR BOILER SYSTEM REACTOR VESSEL LEVEL 604 LEVEL TRANSMITTER	ROSEMOUNT 1153DB5PAN0016	CT-3 HARSH C 0/16-620	A	A1	I	YES YES	.003 0.20 SEC H2	YES	T 10Y 10Y	SP604-000-03
1B21 N 0075A	NSSS SYSTEM MAIN TURB CONDENSER VACUUM 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153AB5PAN0016	TB-2 HARSH TBI/08-647	A	A1	C	YES YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1B21 N 0075B	NSSS SYSTEM MAIN TURB CONDENSER VACUUM 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153AB5PAN0016	TB-2 HARSH TBA/07-647	A	A1	C	YES YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1B21 N 0075C	NSSS SYSTEM MAIN TURB CONDENSER VACUUM 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153AB5PAN0016	TB-2 HARSH TBA/13-647	A	A1	C	YES YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1B21 N 0075D	NSSS SYSTEM MAIN TURB CONDENSER VACUUM 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153AB5PAN0016	TB-2 HARSH TBI/14-647	A	A1	C	YES YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1B21 N 0076A	NSSS SYSTEM TURB STEAM LINE PRESSURE 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153GB9PAN0016	TB-2 HARSH TBE/15-620	A	A1	C	YES YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1B21 N 0076B	NSSS SYSTEM	ROSEMOUNT	TB-2	A	A1	C	YES	.003		YES	T	10Y	SP604-000-03
	TURB STEAM LINE PRESSURE	1153GB9PAN0016	HARSH					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		TBF/15-620				YES						
1B21 N 0076C	NSSS SYSTEM	ROSEMOUNT	TB-2	A	A1	C	YES	.003		YES	T	10Y	SP604-000-03
	TURB STEAM LINE PRESSURE	1153GB9PAN0016	HARSH					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		TBF/15-620				YES						
1B21 N 0076D	NSSS SYSTEM	ROSEMOUNT	TB-2	A	A1	C	YES	.003		YES	T	10Y	SP604-000-03
	TURB STEAM LINE PRESSURE	1153GB9PAN0016	HARSH					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		TBF/15-620				YES						
1B21 N 0078A	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	A	A1	C	YES	.003		YES	T	10Y	SP604-000-03
	PRESS TRANSMITTER-REACTOR	1153GB9PAN0016	HARSH					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		C 0/02-620				YES						
1B21 N 0078B	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	A	A1	C	YES	.003		YES	T	10Y	SP604-000-03
	PRESS TRANSMITTER-REACTOR	1153GB9PAN0016	HARSH					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		C 0/11-620				YES						
1B21 N 0078C	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	A	A1	C	YES	.003		YES	T	10Y	SP604-000-03
	PRESS TRANSMITTER-REACTOR	1153GB9PAN0016	HARSH					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		C 0/07-620				YES						
1B21 N 0078D	NUCLEAR BOILER SYSTEM	ROSEMOUNT	CT-3	A	A1	C	YES	.003		YES	T	10Y	SP604-000-03
	PRESS TRANSMITTER-REACTOR	1153GB9PAN0016	HARSH					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		C 0/16-620				YES						
1B21 N 0081A	NSSS SYSTEM	ROSEMOUNT	CT-3	A	A1	C	YES	.003		YES	T	10Y	SP604-000-03
	REACTOR WATER LEVEL	1153DB5PAN0016	HARSH					0.20 SEC				10Y	
	604 DIFFERENTIAL PRESS TRANSMITTER		C 0/02-620				YES						
1B21 N 0081B	NSSS SYSTEM	ROSEMOUNT	CT-3	A	A1	C	YES	.003		YES	T	10Y	SP604-000-03
	REACTOR WATER LEVEL	1153DB5PAN0016	HARSH					0.20 SEC				10Y	
	604 DIFFERENTIAL PRESS TRANSMITTER.		C 0/11-620				YES						
1B21 N 0081C	NSSS SYSTEM	ROSEMOUNT	CT-3	A	A1	C	YES	.003		YES	T	10Y	SP604-000-03
	REACTOR WATER LEVEL	1153DB5PAN0016	HARSH					0.20 SEC				10Y	
	604 DIFFERENTIAL PRESS TRANSMITTER		C 0/07-620				YES						
1B21 N 0081D	NSSS SYSTEM	ROSEMOUNT	CT-3	A	A1	C	YES	.003		YES	T	10Y	SP604-000-03
	REACTOR WATER LEVEL	1153DB5PAN0016	HARSH					0.20 SEC				10Y	
	604 DIFFERENTIAL PRESS TRANSMITTER		C 0/16-620				YES						

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	LF/MI	QUALIFICATION SUMMARY
1B21 N 0095A	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	A	A1	I	YES	.003		YES	T	10Y	SP604-000-03
	REACTOR VESSEL LEVEL		1153DB4PAN0016	HARSH					0.20 SEC				10Y	
	604	DIFFERENTIAL LEVEL	TRANSMITTER	C 0/02-620				YES	H2					
1B21 N 0095B	NUCLEAR BOILER SYSTEM		ROSEMOUNT	CT-3	A	A1	I	YES	.003		YES	T	10Y	SP604-000-03
	REACTOR VESSEL LEVEL		1153DB4PAN0016	HARSH					0.20 SEC				10Y	
	604	DIFFERENTIAL LEVEL	TRANSMITTER	C 0/11-620				YES	H2					
1B21 N 0490	NUCLEAR BOILER		ROSEMOUNT	CT-3	A	A1	J	YES	.003		YES	T	10Y	SP604-000-03
	REACTOR VESSEL LEVEL		1153DB5PAN0016	HARSH					0.20 SEC				10Y	
	604	LEVEL TRANSMITTER		C 0/16-620				YES	H2					
1C11 N 0054A	ROD CONTROL AND INFORMATION SYSTEM		ROSEMOUNT	TB-2	A	A1	J	YES	.003		YES	T	10Y	SP604-000-03
	FIRST STAGE TURBINE PRESSURE		1153GB7PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		TBH/16-593				YES						
1C11 N 0054B	ROD CONTROL AND INFORMATION SYSTEM		ROSEMOUNT	TB-2	A	A1	J	YES	.003		YES	T	10Y	SP604-000-03
	FIRST STAGE TURBINE PRESSURE		1153GB7PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		HBE/04-620				YES						
1C11 N 0054C	ROD CONTROL AND INFORMATION SYSTEM		ROSEMOUNT	TB-2	A	A1	J	YES	.003		YES	T	10Y	SP604-000-03
	FIRST STAGE TURBINE PRESSURE		1153GB8PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		TBH/16-593				YES						
1C11 N 0054D	ROD CONTROL AND INFORMATION SYSTEM		ROSEMOUNT	TB-2	A	A1	J	YES	.003		YES	T	10Y	SP604-000-03
	FIRST STAGE TURBINE PRESSURE		1153GB8PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		HBE/04-620				YES						
1C61 N 0001	REMOTE REACTOR SHUTDOWN		ROSEMOUNT	AB-6	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	REACTOR FLOW		1153DB5PAN0016	MILD					0.20 SEC				10Y	
	604	FLOW TRANSMITTER		AXB/06-568										
1C61 N 0006	REMOTE REACTOR SHUTDOWN		ROSEMOUNT	CT-3	A	A1	J	YES	.003		YES	T	10Y	SP604-000-03
	REACTOR PRESSURE		1153GB9PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESS TRANSMITTER		C 0/02-620				YES	H2					
1C61 N 0010	REMOTE REACTOR SHUTDOWN		ROSEMOUNT	CT-3	A	A1	J	YES	.003		YES	T	10Y	SP604-000-03
	REACTOR LEVEL		1153DB5PAN0016	HARSH					0.20 SEC				10Y	
	604	LEVEL TRANSMITTER		C 0/02-620				YES	H2					
1C71 N 0050A	REACTOR PROTECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	A	YES	.003		YES	T	10Y	SP604-000-03
	DRYWELL PRESS XMTR		1153AB5PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		C 0/02-620				YES						

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD	EC CAT ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1C71 N 0050B	REACTOR PROTECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	A	YES	.003		YES	T	10Y	SP604-000-03
	DRYWELL PRESS XMTR		1153AB5PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		C 0/11-620				YES						
1C71 N 0050C	REACTOR PROTECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	A	YES	.003		YES	T	10Y	SP604-000-03
	DRYWELL PRESS XMTR		1153AB5PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		C 0/07-620				YES						
1C71 N 0050D	REACTOR PROTECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	A	YES	.003		YES	T	10Y	SP604-000-03
	DRYWELL PRESS XMTR		1153AB5PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		C 0/16-620				YES						
1C71 N 0052A	REACTOR PROTECTION SYSTEM		ROSEMOUNT	TB-2	A	A1	A	YES	.003		YES	T	10Y	SP604-000-03
	TURB 1ST STAGE PRESS XMTR		1153GB9PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		TBH/16-593				YES						
1C71 N 0052B	REACTOR PROTECTION SYSTEM		ROSEMOUNT	TB-2	A	A1	A	YES	.003		YES	T	10Y	SP604-000-03
	TURB 1ST STAGE PRESS XMTR		1153GB9PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		HBE/04-620				YES						
1C71 N 0052C	REACTOR PROTECTION SYSTEM		ROSEMOUNT	TB-2	A	A1	A	YES	.003		YES	T	10Y	SP604-000-03
	TURB 1ST STAGE PRESS XMTR		1153GB9PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		HBE/04-620				YES						
1C71 N 0052D	REACTOR PROTECTION SYSTEM		ROSEMOUNT	TB-2	A	A1	A	YES	.003		YES	T	10Y	SP604-000-03
	TURB 1ST STAGE PRESS XMTR		1153GB9PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		TBH/16-593				YES						
1D23 N 0022A	CONTAINMENT ATMOSPHERE MONITORING		ROSEMOUNT	AB-1	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	CONTAINMENT PRESSURE		1153AB6	MILD					0.02 SEC				10Y	
	594	PRESSURE TRANSMITTER		AXD/02-620										
1D23 N 0022B	CONTAINMENT ATMOSPHERE MONITORING		ROSEMOUNT	FB-4	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	CONTAINMENT PRESSURE		1153AB6	MILD					0.02 SEC				10Y	
	594	PRESSURE TRANSMITTER		IBB/02-654										
1D23 N 0032A	CONTAINMENT ATMOSPHERE MONITORING		ROSEMOUNT	AB-1	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	DRYWELL/CONT. PRESS DIFFERENTIAL		1153DB3	MILD					2.00 SEC				10Y	
	594	DIFFERENTIAL	PRESSURE TRANSMITTE	AXD/02-620										
1D23 N 0032B	CONTAINMENT ATMOSPHERE MONITORING		ROSEMOUNT	FB-4	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	DRYWELL/CONT. PRESS DIFFERENTIAL		1153DB3	MILD					2.00 SEC				10Y	
	594	DIFFERENTIAL	PRESSURE TRANSMITTE	IBB/02-654										

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD EC CAT ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1D23 N 0042A	CONTAINMENT ATMOSPHERE MONITORING DRYWELL PRESSURE NARROW RANGE 594 PRESSURE TRANSMITTER	ROSEMOUNT 1153AB5	AB-1 MILD AXD/02-620	A	A4	J YES	.003 0.20 SEC	YES	T	10Y 10Y	SP604-000-03
1D23 N 0042B	CONTAINMENT ATMOSPHERE MONITORING DRYWELL PRESSURE NARROW RANGE 594 PRESSURE TRANSMITTER	ROSEMOUNT 1153AB5	FB-4 MILD IBB/02-654	A	A4	J YES	.003 0.20 SEC	YES	T	10Y 10Y	SP604-000-03
1D23 N 0043A	CONTAINMENT ATMOSPHERE MONITORING DRYWELL PRESSURE WIDE RANGE 594 PRESSURE TRANSMITTER	ROSEMOUNT 1153AB6	AB-1 MILD AXD/02-620	A	A4	J YES	.003 0.20 SEC	YES	T	10Y 10Y	SP604-000-03
1D23 N 0043B	CONTAINMENT ATMOSPHERE MONITORING DRYWELL PRESSURE WIDE RANGE 594 PRESSURE TRANSMITTER	ROSEMOUNT 1153AB6	FB-4 MILD IBB/02-654	A	A4	J YES	.003 0.20 SEC	YES	T	10Y 10Y	SP604-000-03
1D23 N 0230	CONTAINMENT ATMOSPHERE MONITORING DRYWELL PRESSURE NARROW RANGE 594 PRESSURE TRANSMITTER	ROSEMOUNT 1153AB5	AB-1 MILD AXD/02-620	A	A4	J YES	.003 N/A	YES	T	40Y 10Y	SP604-000-03
1D23 N 0270A	CONTAINMENT ATMOSPHERE MONITORING CNTMT PRESSURE-WIDE RANGE 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153AB6PAN0016	AB-1 MILD AXD/02-620	A	A4	J YES	.003 0.20 SEC	YES	T	10Y 10Y	SP604-000-03
1D23 N 0270B	CONTAINMENT ATMOSPHERE MONITORING CNTMT PRESSURE-WIDE RANGE 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153AB6PAN0016	FB-4 MILD IBA/01-654	A	A4	J YES	.003 0.20 SEC	YES	T	10Y 10Y	SP604-000-03
1E12 N 0007A	RESIDUAL HEAT REMOVAL SYSTEM HEAT EXCHANGER INLET 604 DIFFERENTIAL PRESS TRANSMITTER	ROSEMOUNT 1153DB5PAN0016	AB-6 MILD AXB/06-568	A	A4	I YES	.003 0.20 SEC	YES	T	10Y 10Y	SP604-000-03
1E12 N 0007B	RESIDUAL HEAT REMOVAL SYSTEM HEAT EXCHANGER INLET 604 DIFFERENTIAL PRESS TRANSMITTER	ROSEMOUNT 1153DB5PAN0016	AB-6 MILD AXB/03-568	A	A4	I YES	.003 0.20 SEC	YES	T	10Y 10Y	SP604-000-03
1E12 N 0013	RESIDUAL HEAT REMOVAL SYSTEM REACTOR HEAD SPRAY 604 FLOW TRANSMITTER	ROSEMOUNT 1153DB5PAN0016	AB-9 HARSH AXC/07-599	A	A1	I YES YES	.003 0.20 SEC	YES	T	10Y 10Y	SP604-000-03
1E12 N 0015A	RESIDUAL HEAT REMOVAL SYSTEM FLOW TO REACTOR 604 DIFFERENTIAL PRESS TRANSMITTER	ROSEMOUNT 1153DB5PAN0016	AB-6 MILD AXB/06-568	A	A4	I YES	.003 0.20 SEC	YES	T	10Y 10Y	SP604-000-03

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	LF/MI	QUALIFICATION SUMMARY
1E12 N 0015B	RESIDUAL HEAT REMOVAL SYSTEM FLOW TO REACTOR 604	DIFFERENTIAL PRESS	ROSEMOUNT 1153DB5PAN0016 TRANSMITTER	AB-6 MILD AXB/03-568	A	A4	I	YES	.003 0.20 SEC		YES	T	10Y 10Y	SP604-000-03
1E12 N 0015C	RESIDUAL HEAT REMOVAL SYSTEM FLOW TO REACTOR 604	DIFFERENTIAL PRESS	ROSEMOUNT 1153DB5PAN0016 TRANSMITTER	AB-6 MILD AXB/04-568	A	A4	I	YES	.003 0.20 SEC		YES	T	10Y 10Y	SP604-000-03
1E12 N 0026A	RESIDUAL HEAT REMOVAL SYSTEM STEAM TO HEAT EXCHANGER 604	PRESSURE TRANSMITTER	ROSEMOUNT 1153GB8PAN0016	AB-6 MILD AXB/06-568	A	A4	A	YES	.003 0.20 SEC		YES	T	10Y 10Y	SP604-000-03
1E12 N 0026B	RESIDUAL HEAT REMOVAL SYSTEM STEAM TO HEAT EXCHANGER 604	PRESSURE TRANSMITTER	ROSEMOUNT 1153GB8PAN0016	AB-6 MILD AXB/03-568	A	A4	A	YES	.003 0.20 SEC		YES	T	10Y 10Y	SP604-000-03
1E12 N 0028	RESIDUAL HEAT REMOVAL SYSTEM CNDS TO RCIC SUCTION 604	PRESSURE TRANSMITTER	ROSEMOUNT 1153GB7PAN0016	AB-6 MILD AXB/06-568	A	A4	A	YES	.003 0.20 SEC		YES	T	10Y 10Y	SP604-000-03
1E12 N 0050A	RESIDUAL HEAT REMOVAL SYSTEM STEAM TO HEAT EXCHANGER 604	PRESSURE TRANSMITTER	ROSEMOUNT 1153GB8PAN0016	AB-6 MILD AXB/06-568	A	A4	A	YES	.003 0.20 SEC		YES	T	10Y 10Y	SP604-000-03
1E12 N 0050B	RESIDUAL HEAT REMOVAL SYSTEM STEAM TO HEAT EXCHANGER 604	PRESSURE TRANSMITTER	ROSEMOUNT 1153GB8PAN0016	AB-6 MILD AXB/03-568	A	A4	A	YES	.003 0.20 SEC		YES	T	10Y 10Y	SP604-000-03
1E12 N 0051A	RESIDUAL HEAT REMOVAL SYSTEM STEAM TO HEAT EXCHANGER 604	PRESSURE TRANSMITTER	ROSEMOUNT 1153GB8PAN0016	AB-6 MILD AXB/06-568	A	A4	A	YES	.003 0.20 SEC		YES	T	10Y 10Y	SP604-000-03
1E12 N 0051B	RESIDUAL HEAT REMOVAL SYSTEM STEAM TO HEAT EXCHANGER 604	PRESSURE TRANSMITTER	ROSEMOUNT 1153GB8PAN0016	AB-6 MILD AXB/03-568	A	A4	A	YES	.003 0.20 SEC		YES	T	10Y 10Y	SP604-000-03
1E12 N 0052A	RESIDUAL HEAT REMOVAL SYSTEM FLOW TO REACTOR 604	DIFFERENTIAL PRESS	ROSEMOUNT 1153DB3PAN0016 TRANSMITTER	AB-6 MILD AXB/06-568	A	A4	I	YES	.003 0.20 SEC		YES	T	10Y 10Y	SP604-000-03
1E12 N 0052B	RESIDUAL HEAT REMOVAL SYSTEM FLOW TO REACTOR 604	DIFFERENTIAL PRESS	ROSEMOUNT 1153DB3PAN0016 TRANSMITTER	AB-6 MILD AXB/03-568	A	A4	I	YES	.003 0.20 SEC		YES	T	10Y 10Y	SP604-000-03

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1E12 N 0052C	RESIDUAL HEAT REMOVAL SYSTEM	ROSEMOUNT	AB-6	A	A4	I	YES	.003		YES	T	10Y	SP604-000-03
	FLOW TO REACTOR	1153DB3PAN0016	MILD					0.20 SEC				10Y	
	604 DIFFERENTIAL PRESS	TRANSMITTER	AXB/04-568										
1E12 N 0055A	RESIDUAL HEAT REMOVAL SYSTEM	ROSEMOUNT	AB-6	A	A4	C	YES	.003		YES	T	10Y	SP604-000-03
	RHR PUMP PRESSURE	1153GB7PAN0016	MILD					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		AXB/06-568										
1E12 N 0055B	RESIDUAL HEAT REMOVAL SYSTEM	ROSEMOUNT	AB-6	A	A4	C	YES	.003		YES	T	10Y	SP604-000-03
	RHR PUMP PRESSURE	1153GB7PAN0016	MILD					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		AXB/03-568										
1E12 N 0055C	RESIDUAL HEAT REMOVAL SYSTEM	ROSEMOUNT	AB-6	A	A4	C	YES	.003		YES	T	10Y	SP604-000-03
	RHR PUMP PRESSURE	1153GB7PAN0016	MILD					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		AXB/04-568										
1E12 N 0056A	RESIDUAL HEAT REMOVAL SYSTEM	ROSEMOUNT	AB-6	A	A4	C	YES	.003		YES	T	10Y	SP604-000-03
	RHR PUMP PRESSURE	1153GB7PAN0016	MILD					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		AXB/06-568										
1E12 N 0056B	RESIDUAL HEAT REMOVAL SYSTEM	ROSEMOUNT	AB-6	A	A4	C	YES	.003		YES	T	10Y	SP604-000-03
	RHR PUMP PRESSURE	1153GB7PAN0016	MILD					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		AXB/03-568										
1E12 N 0056C	RESIDUAL HEAT REMOVAL SYSTEM	ROSEMOUNT	AB-6	A	A4	C	YES	.003		YES	T	10Y	SP604-000-03
	RHR PUMP PRESSURE	1153GB7PAN0016	MILD					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		AXB/04-568										
1E12 N 0058A	RESIDUAL HEAT REMOVAL SYSTEM	ROSEMOUNT	CT-3	A	A1	J	YES	.003		YES	T	10Y	SP604-000-03
	FLOW TO REACTOR	1153GB8PAN0016	HARSH					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		C 0/02-620				YES	H2					
1E12 N 0058B	RESIDUAL HEAT REMOVAL SYSTEM	ROSEMOUNT	CT-3	A	A1	J	YES	.003		YES	T	10Y	SP604-000-03
	FLOW TO REACTOR	1153GB8PAN0016	HARSH					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		C 0/11-620				YES	H2					
1E12 N 0058C	RESIDUAL HEAT REMOVAL SYSTEM	ROSEMOUNT	AB-6	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	FLOW TO REACTOR	1153GB8PAN0016	MILD					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		AXB/04-568										
1E21 N 0003	LOW PRESSURE CORE SPRAY SYSTEM	ROSEMOUNT	AB-6	A	A4	I	YES	.003		YES	T	10Y	SP604-000-03
	PUMP DISCH FLOW	1153DB5PAN0016	MILD					0.20 SEC				10Y	
	604 DIFFERENTIAL	PRESSURE TRANSMITTE	AXC/08-568										

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	MANUFACTURER / MODEL / EQUIP. DESCRIPTION	ZONE / LOCATION	QUALD	EC CAT / ELEV	FT	OPER DEMO / SEAL	ACC RES TME / H2/H2 DEMO	ACC/RT DEMO	QUALIFICATION & LF/MI	SUMMARY
1E21 N 0050	LOW PRESSURE CORE SPRAY SYSTEM	ROSEMOUNT	AB-6	A	A4	A	YES	.003	YES	T 10Y	SP604-000-03
	PRESS PERM TO TEST INJ VLV	1153GB8PAN0016	MILD					0.20 SEC		10Y	
	604 DIFFERENTIAL	PRESSURE TRANSMITTE	AXC/08-568								
1E21 N 0051	LOW PRESSURE CORE SPRAY SYSTEM	ROSEMOUNT	AB-6	A	A4	I	YES	.003	YES	T 10Y	SP604-000-03
	MIN FLOW TO SUPP POOL VLV	1153DB4PAN0016	MILD					0.20 SEC		10Y	
	604 FLOW TRANSMITTER		AXC/08-568								
1E21 N 0052	LOW PRESSURE CORE SPRAY SYSTEM	ROSEMOUNT	AB-6	A	A4	C	YES	.003	YES	T 10Y	SP604-000-03
	LPCS PUMP PRESS	1153GB7PAN0016	MILD					0.20 SEC		10Y	
	604 PRESSURE TRANSMITTER		AXC/08-568								
1E21 N 0053	LOW PRESSURE CORE SPRAY SYSTEM	ROSEMOUNT	AB-6	A	A4	C	YES	.003	YES	T 10Y	SP604-000-03
	LPCS PUMP PRESS	1153GB7PAN0016	MILD					0.20 SEC		10Y	
	604 PRESSURE TRANSMITTER		AXC/08-568								
1E21 N 0054	LOW PRESSURE CORE SPRAY SYSTEM	ROSEMOUNT	AB-6	A	A4	I	YES	.003	YES	T 10Y	SP604-000-03
	LPCS PUMP DISCH PRESS	1153	MILD					0.20 SEC		10Y	
	604 PRESSURE TRANSMITTER		AXC/08-568								
1E22 N 0005	HIGH PRESSURE CORE SPRAY SYSTEM	ROSEMOUNT	AB-6	A	A4	I	YES	.003	YES	T 10Y	SP604-000-03
	HPCS FLOW	1153	MILD					0.20 SEC		10Y	
	604 FLOW TRANSMITTER		AXB/02-574								
1E22 N 0051	HIGH PRESSURE CORE SPRAY SYSTEM	ROSEMOUNT	AB-6	A	A4	I	YES	.003	YES	T 10Y	SP604-000-03
	MAIN PUMP DISCH PRESS	1153GB9PAN0016	MILD					0.20 SEC		10Y	
	604 PRESSURE TRANSMITTER		AXB/02-574								
1E22 N 0054C	HIGH PRESSURE CORE SPRAY SYSTEM	ROSEMONT	OU-T	A	A4	F	YES	.003	YES	T 10Y	SP604-000-03
	CONDENSATE STORAGE TANK LVL	1153DB3PAN0016	MILD					0.20 SEC		10Y	
	604 DIFFERENTIAL PRESS	TRANSMITTER	TBA/17-620								
1E22 N 0054G	HIGH PRESSURE CORE SPRAY SYSTEM	ROSEMONT	OU-T	A	A4	F	YES	.003	YES	T 10Y	SP604-000-03
	CONDENSATE STORAGE TANK LVL	1153DB3PAN0016	MILD					0.20 SEC		10Y	
	604 DIFFERENTIAL PRESS	TRANSMITTER	TBA/17-620								
1E22 N 0056	HIGH PRESSURE CORE SPRAY SYSTEM	ROSEMOUNT	AB-6	A	A4	I	YES	.003	YES	T 10Y	SP604-000-03
	HPCS FLOW	1153DB4PAN0016	MILD					0.20 SEC		10Y	
	604 DIFFERENTIAL PRESS	TRANSMITTER	AXB/02-574								
1E31 N 0080A	LEAK DETECTION SYSTEM	ROSEMOUNT	CT-3	A	A1	J	YES	.003	YES	T 10Y	SP604-000-03
	RHR A TO LPCS INJECTION	1153DB5PAN0016	HARSH					0.20 SEC		10Y	
	604 DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/02-620				YES	H2			

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG		MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD	EC CAT ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1E31 N 0080B	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	J	YES	.003	YES		T	10Y	SP604-000-03
	RHR B TO RHR C INJECTION		1153D85PAN0016	HARSH					0.20 SEC				10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/11-620				YES	H2					
1E31 N 0083A	LEAK DETECTION SYSTEM		ROSEMOUNT	AB-6	A	A4	B	YES	.003	YES		T	10Y	SP604-000-03
	RCIC STEAM SUPPLY		1153DB7PAN0016	MILD					0.20 SEC				10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	AXA/06-568										
1E31 N 0083B	LEAK DETECTION SYSTEM		ROSEMOUNT	AB-6	A	A4	B	YES	.003	YES		T	10Y	04-000-03
	RCIC STEAM SUPPLY		1153DB7PAN0016	MILD					0.20 SEC				10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	AXB/03-568										
1E31 N 0086A	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES		T	10Y	SP604-000-03
	STEAM LINE A FLOW		1153DB7PAN0016	HARSH					0.20 SEC				10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/01-620				YES						
1E31 N 0086B	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES		T	10Y	SP604-000-03
	STEAM LINE A FLOW		1153DB7PAN0016	HARSH					0.20 SEC				10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/01-620				YES						
1E31 N 0086C	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES		T	10Y	SP604-000-03
	STEAM LINE A FLOW		1153DB7PAN0016	HARSH					0.20 SEC				10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/07-620				YES						
1E31 N 0086D	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES		T	10Y	SP604-000-03
	STEAM LINE A FLOW		1153DB7PAN0016	HARSH					0.20 SEC				10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/07-620				YES						
1E31 N 0087A	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES		T	10Y	SP604-000-03
	STEAM LINE B FLOW		1153DB7PAN0016	HARSH					0.20 SEC				10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/12-620				YES						
1E31 N 0087B	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES		T	10Y	SP604-000-03
	STEAM LINE B FLOW		1153DB7PAN0016	HARSH					0.20 SEC				10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/12-620				YES						
1E31 N 0087C	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES		T	10Y	SP604-000-03
	STEAM LINE B FLOW		1153DB7PAN0016	HARSH					0.20 SEC				10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/17-620				YES						
1E31 N 0087D	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES		T	10Y	SP604-000-03
	STEAM LINE B FLOW		1153DB7PAN0016	HARSH					0.20 SEC				10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/17-620				YES						

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER / MODEL	ZONE / LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES TME H2/H2 DEMO	ACC/RT DEMO	M LF/MI	QUALIFICATION SUMMARY
1E31 N 0088A	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES	T 10Y	SP604-000-03
	STEAM LINE C FLOW		1153DB7PAN0016	HARSH					0.20 SEC		10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/01-620				YES				
1E31 N 0088B	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES	T 10Y	SP604-000-03
	STEAM LINE C FLOW		1153DB7PAN0016	HARSH					0.20 SEC		10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/01-620				YES				
1E31 N 0088C	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES	T 10Y	SP604-000-03
	STEAM LINE C FLOW		1153DB7PAN0016	HARSH					0.20 SEC		10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/07-620				YES				
1E31 N 0088D	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES	T 10Y	SP604-000-03
	STEAM LINE C FLOW		1153DB7PAN0016	HARSH					0.20 SEC		10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/07-620				YES				
1E31 N 0089A	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES	T 10Y	SP604-000-03
	STEAM LINE D FLOW		1153DB7PAN0016	HARSH					0.20 SEC		10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/12-620				YES				
1E31 N 0089B	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES	T 10Y	SP604-000-03
	STEAM LINE D FLOW		1153DB7PAN0016	HARSH					0.20 SEC		10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/12-620				YES				
1E31 N 0089C	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES	T 10Y	SP604-000-03
	STEAM LINE D FLOW		1153DB7PAN0016	HARSH					0.20 SEC		10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/17-620				YES				
1E31 N 0089D	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-3	A	A1	C	YES	.003	YES	T 10Y	SP604-000-03
	STEAM LINE D FLOW		1153DB7PAN0016	HARSH					0.20 SEC		10Y	
	604	DIFFERENTIAL	PRESSURE TRANSMITTE	C 0/17-620				YES				
1E31 N 0092	LEAK DETECTION SYSTEM		ROSEMOUNT	CT-4	A	A3	A	YES	.003	YES	T 10Y	SP604-000-03
	REACTR FLANGE LEAKAGE PRES TRANS		1153GB8PAN0016	HARSH					0.20 SEC		10Y	
	604	PRESSURE TRANSMITTER		C 0/02-642				YES				
1E32 N 0051A	MSIV LEAKAGE CONTROL SYSTEM		ROSEMOUNT	AB-9	A	A1	I	YES	.003	YES	T 10Y	SP604-000-03
	STEAM TUNNEL		1153AB5PAN0016	HARSH					0.20 SEC		10Y	
	604	PRESSURE TRANSMITTER		AXC/07-599				YES				
1E32 N 0051E	MSIV LEAKAGE CONTROL SYSTEM		ROSEMOUNT	AB-9	A	A1	I	YES	.003	YES	T 10Y	SP604-000-03
	STEAM TUNNEL		1153AB5PAN0016	HARSH					0.20 SEC		10Y	
	604	PRESSURE TRANSMITTER		AXC/07-599				YES				

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TIME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1E32 N 0051J	MSIV LEAKAGE CONTROL SYSTEM	ROSEMOUNT	AB-9	A	A1 I	YES	.003		YES	T 10Y	SP604-000-03
	STEAM TUNNEL	1153AB5PAN0016	HARSH				0.20	SEC		10Y	
	604 PRESSURE TRANSMITTER		AXC/07-599			YES					
1E32 N 0051N	MSIV LEAKAGE CONTROL SYSTEM	ROSEMOUNT	AB-9	A	A1 I	YES	.003		YES	T 10Y	SP604-000-03
	STEAM TUNNEL	1153AB5PAN0016	HARSH				0.20	SEC		10Y	
	604 PRESSURE TRANSMITTER		AXC/07-599			YES					
1E32 N 0054	MSIV LEAKAGE CONTROL SYSTEM	ROSEMOUNT	AB-9	A	A1 I	YES	.003		YES	T 10Y	SP604-000-03
	LOW PRESS MANIFOLD	1153DB4PAN0016	HARSH				0.20	SEC		10Y	
	604 DIFFERENTIAL PRESS TRANSMITTER		AXC/07-599			YES					
1E32 N 0055	MSIV LEAKAGE CONTROL SYSTEM	ROSEMOUNT	AB-9	A	A1 I	YES	.003		YES	T 10Y	SP604-000-03
	STEAM TUNNEL	1153GB6PAN0016	HARSH				0.20	SEC		10Y	
	604 PRESSURE TRANSMITTER		AXB/06-599			YES					
1E32 N 0056	MSIV LEAKAGE CONTROL SYSTEM	ROSEMOUNT	AB-9	A	A1 I	YES	.003		YES	T 10Y	SP604-000-03
	STEAM TUNNEL	1153AB5PAN0016	HARSH				0.20	SEC		10Y	
	604 PRESSURE TRANSMITTER		AXB/06-599			YES					
1E32 N 0059	MSIV LEAKAGE CONTROL SYSTEM	ROSEMOUNT	AB-9	A	A1 I	YES	.003		YES	T 10Y	SP604-000-03
	EXHAUST BLOWER	1153DB4PAN0016	HARSH				0.20	SEC		10Y	
	604 DIFFERENTIAL PRESS TRANSMITTER		AXB/06-599			YES					
1E32 N 0061A	MSIV LEAKAGE CONTROL SYSTEM	ROSEMOUNT	AB-9	A	A1 I	YES	.003		YES	T 10Y	SP604-000-03
	STEAM TUNNEL	1153GB6PAN0016	HARSH				0.20	SEC		10Y	
	604 PRESSURE TRANSMITTER		AXC/07-599			YES					
1E32 N 0061E	MSIV LEAKAGE CONTROL SYSTEM	ROSEMOUNT	AB-9	A	A1 I	YES	.003		YES	T 10Y	SP604-000-03
	STEAM TUNNEL	1153GB6PAN0016	HARSH				0.20	SEC		10Y	
	604 PRESSURE TRANSMITTER		AXC/07-599		O	YES					
1E32 N 0061J	MSIV LEAKAGE CONTROL SYSTEM	ROSEMOUNT	AB-9	A	A1 I	YES	.003		YES	T 10Y	SP604-000-03
	STEAM TUNNEL	1153GB6PAN0016	HARSH				0.20	SEC		10Y	
	604 PRESSURE TRANSMITTER		AXC/07-599		O	YES					
1E32 N 0061N	MSIV LEAKAGE CONTROL SYSTEM	ROSEMOUNT	AB-9	A	A1 I	YES	.003		YES	T 10Y	SP604-000-03
	STEAM TUNNEL	1153GB6PAN0016	HARSH				0.20	SEC		10Y	
	604 PRESSURE TRANSMITTER		AXC/07-599		O	YES					
1E51 N 0003	REACTOR CORE ISOLATION COOLING	ROSEMOUNT	AB-6	A	A4 E	YES	.003		YES	T 10Y	SP604-000-03
	PUMP DISCH FLOW	1153DB5PAN0016	MILD				0.20	SEC		10Y	
	604 DIFFERENTIAL PRESS TRANSMITTER		AXA/06-568								

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES TME H2/H2	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1E51 N 0035A	REACTOR CORE ISOLATION COOLING CNDS STORAGE TANK LEVEL 604 DIFFERENTIAL PRESS	ROSEMOUNT 1153DB4PAN0016 TRANSMITTER	OU-T MILD TBA/17-620	A	A4 E	YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1E51 N 0035E	REACTOR CORE ISOLATION COOLING CNDS STORAGE TANK LEVEL 604 DIFFERENTIAL PRESS	ROSEMOUNT 1153DB4PAN0016 TRANSMITTER	OU-T MILD TBA/17-620	A	A4 E	YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1E51 N 0050	REACTOR CORE ISOLATION COOLING PUMP DISCH PRESS 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153GB9PAN0016	AB-6 MILD AXA/06-568	A	A4 E	YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1E51 N 0051	REACTOR CORE ISOLATION COOLING PUMP DISCH FLOW 604 DIFFERENTIAL PRESS	ROSEMOUNT 1153DB4PAN0016 TRANSMITTER	AB-6 MILD AXA/06-568	A	A4 E	YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1E51 N 0053	REACTOR CORE ISOLATION COOLING PUMP SUCT PRESS 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153GB5PAN0016	AB-6 MILD AXA/06-568	A	A4 E	YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1E51 N 0055A	REACTOR CORE ISOLATION COOLING TURB EXHAUST DIAPHRAGM 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153GB6PAN0016	AB-6 MILD AXA/06-568	A	A4 E	YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1E51 N 0055B	REACTOR CORE ISOLATION COOLING TURBINE EXHAUST DIAPHRAGM 604 PRESS TRANSMITTER	ROSEMOUNT 1153GB3PAN0016	AB-6 MILD AXB/03-568	A	A4 E	YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1E51 N 0055E	REACTOR CORE ISOLATION COOLING TURB EXHAUST DIAPHRAGM 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153GB6PAN0016	AB-6 MILD AXA/06-568	A	A4 E	YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1E51 N 0055F	REACTOR CORE ISOLATION COOLING TURBINE EXHAUST DIAPHRAGM 604 PRESS TRANSMITTER	ROSEMOUNT 1153GB3PAN0016	AB-6 MILD AXB/03-568	A	A4 E	YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1E51 N 0056A	REACTOR CORE ISOLATION COOLING TURB EXHAUST 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153GB7PAN0016	AB-6 MILD AXA/06-568	A	A4 E	YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03
1E51 N 0056E	REACTOR CORE ISOLATION COOLING TURB EXHAUST 604 PRESSURE TRANSMITTER	ROSEMOUNT 1153GB7PAN0016	AB-6 MILD AXA/06-568	A	A4 E	YES	.003 0.20 SEC	YES	T 10Y 10Y	SP604-000-03

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD	EC CAT	FT ELEV	OPER DEMO SEAL	ACC RES TME H2/H2	ACC/RT DEMO	M	LF/MI	QUALIFICATION SUMMARY
1G43 N 0020A	SUPPRESSION POOL MAKE-UP SYSTEM		ROSEMOUNT	CT-8	A	A1	J	YES	.003	YES	T	10Y	SP604-000-03
	UPPER POOL LEVEL		1153DB5PAN0016	HARSH					0.20 SEC			10Y	
	604	LEVEL TRANSMITTER		C 0/02-664				YES	H2				
1G43 N 0020B	SUPPRESSION POOL MAKE-UP SYSTEM		ROSEMOUNT	CT-7	A	A1	J	YES	.003	YES	T	10Y	SP604-000-03
	UPPER POOL LEVEL		1153DB5PAN0016	HARSH					0.20 SEC			10Y	
	604	LEVEL TRANSMITTER		C 0/17-664				YES	H2				
1G43 N 0060A	SUPPRESSION POOL MAKE-UP SYSTEM		ROSEMOUNT	AB-6	A	A4	J	YES	.003	YES	T	10Y	SP604-000-03
	SUPP POOL LEVEL CONTROL		1153DB4PAN0016	MILD					0.20 SEC			10Y	
	604	LEVEL TRANSMITTER		AXD/01-574									
1G43 N 0060B	SUPPRESSION POOL MAKE-UP SYSTEM		ROSEMOUNT	AB-6	A	A4	J	YES	.003	YES	T	10Y	SP604-000-03
	SUPP POOL LEVEL CONTROL		1153DB4PAN0016	MILD					0.20 SEC			10Y	
	604	LEVEL TRANSMITTER		AXC/02-574									
1G43 N 0070A	SUPPRESSION POOL MAKE-UP SYSTEM		ROSEMOUNT	AB-6	A	A4	J	YES	.003	YES	T	10Y	SP604-000-03
	SUPP POOL LEVEL CONTROL		1153DB5PAN0016	MILD					0.20 SEC			10Y	
	604	LEVEL TRANSMITTER		AXE/01-574									
1G43 N 0070B	SUPPRESSION POOL MAKE-UP SYSTEM		ROSEMOUNT	AB-6	A	A4	J	YES	.003	YES	T	10Y	SP604-000-03
	SUPP POOL LEVEL CONTROL		1153DB5PAN0016	MILD					0.20 SEC			10Y	
	604	LEVEL TRANSMITTER		AXC/02-574									
1G43 N 0080	SUPPRESSION POOL MAKE-UP SYSTEM		ROSEMOUNT	AB-6	A	A4	J	YES	.003	YES	T	10Y	SP604-000-03
	SUPP POOL LEVEL INDICATION		1153DB4PAN0016	MILD					0.20 SEC			10Y	
	604	LEVEL TRANSMITTER		AXD/01-574									
1G43 N 0090A	SUPPRESSION POOL MAKE-UP SYSTEM		ROSEMOUNT	AB-4	A	A1	J	YES	.003	YES	T	10Y	SP604-000-03
	SUPP PL LEVEL-EXTENDED WIDE RNG		1153DB5PAN0016	HARSH					0.20 SEC			10Y	
	604	LEVEL TRANSMITTER		AXD/07-568				YES					
1G43 N 0090B	SUPPRESSION POOL MAKE-UP SYSTEM		ROSEMOUNT	AB-4	A	A1	J	YES	.003	YES	T	10Y	SP604-000-03
	SUPP PL LEVEL-EXTENDED WIDE RNG		1153DB5PAN0016	HARSH					0.20 SEC			10Y	
	604	LEVEL TRANSMITTER		AXD/03-568				YES					
1G43 N 0100A	SUPPRESSION POOL MAKE-UP SYSTEM		ROSEMOUNT	AB-6	A	A4	J	YES	.003	YES	T	10Y	SP604-000-03
	CONTAINMENT WATER LEVEL		1153DB6PAN0016	MILD					0.20 SEC			10Y	
	604	LEVEL TRANSMITTER		AXD/01-574									
1G43 N 0100B	SUPPRESSION POOL MAKE-UP SYSTEM		ROSEMOUNT	AB-6	A	A4	J	YES	.003	YES	T	10Y	SP604-000-03
	CONTAINMENT WATER LEVEL		1153DB6PAN0016	MILD					0.20 SEC			10Y	
	604	LEVEL TRANSMITTER		AXC/02-574									

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1M15 N 0012A	ANNULUS EXHAUST GAS TREATMENT SYSTEM		ROSEMOUNT	FB-4	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	ANNULUS SPACE		1153DB3PAN0016	MILD					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		IBF/06-620										
1M15 N 0012B	ANNULUS EXHAUST GAS TREATMENT SYSTEM		ROSEMOUNT	AB-9	A	A1	J	YES	.003		YES	T	10Y	SP604-000-03
	ANNULUS SPACE		1153DB3PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		AXE/02-599				YES						
1M15 N 0013A	ANNULUS EXHAUST GAS TREATMENT SYSTEM		ROSEMOUNT	AB-9	A	A1	J	YES	.003		YES	T	10Y	SP604-000-03
	ANNULUS SPACE		1153DB3PAN0016	HARSH					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		AXE/09-599				YES						
1M15 N 0013B	ANNULUS EXHAUST GAS TREATMENT SYSTEM		ROSEMOUNT	FB-3	A	A1	J	YES	.003		YES	T	55M	SP604-000-03
	ANNULUS SPACE		1153DB3PAN0016	HARSH					0.20 SEC				55M	
	604	PRESSURE TRANSMITTER		IBC/09-599										
1M17 N 0019	CONTAINMENT VACUUM RELIEF SYSTEM		ROSEMOUNT	AB-1	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	CONTAINMENT		1153GB4	MILD					0.50 SEC				10Y	
	594	PRESSURE TRANSMITTER		AXD/02-620										
1M17 N 0028	CONTAINMENT VACUUM RELIEF SYSTEM		ROSEMOUNT	AB-1	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	CONTAINMENT		1153GB4	MILD					0.50 SEC				10Y	
	594	PRESSURE TRANSMITTER		AXD/02-620										
1M17 N 0038	CONTAINMENT VACUUM RELIEF SYSTEM		ROSEMOUNT	FB-4	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	CONTAINMENT		1153GB4	MILD					0.50 SEC				10Y	
	594	PRESSURE TRANSMITTER		IBB/02-654										
1M17 N 0048	CONTAINMENT VACUUM RELIEF SYSTEM		ROSEMOUNT	FB-4	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	CONTAINMENT		1153GB4	MILD					0.50 SEC				10Y	
	594	PRESSURE TRANSMITTER		IBB/02-654										
1N27 N 0598A	FEEDWATER SYSTEM		ROSEMOUNT	AB-1	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	FEEDWATER LEAKAGE CONTROL		1153GB6PAN0016	MILD					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		AXA/04-620										
1N27 N 0598B	FEEDWATER SYSTEM		ROSEMOUNT	AB-1	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	FEEDWATER LEAKAGE CONTROL		1153GB6PAN0016	MILD					0.20 SEC				10Y	
	604	PRESSURE TRANSMITTER		AXB/04-620										
1P42 N 0041A	EMERGENCY CLOSED COOLING SYSTEM		ROSEMOUNT	CB-5	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	HEAT EXCHANGER - P42B001A		1153DB4	MILD					0.50 SEC				10Y	
	594	DIFFERENTIAL PRESSURE TRANSMITTE		CCC/04-574										

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP604-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP604-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1P42 N 0041B	EMERGENCY CLOSED COOLING SYSTEM	ROSEMOUNT	CB-5	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	HEAT EXCHANGER - P42B001B	1153DB4	MILD					0.50 SEC				10Y	
	594 DIFFERENTIAL	PRESSURE TRANSMITTE	CCC/04-574										
1P42 N 0249	EMERGENCY CLOSED COOLING SYSTEM	ROSEMOUNT	CB-5	A	A4	J	YES	N/A			T	40Y	SP604-000-03
	HEAT EXCHANGER - P42B001A	1153DB4	MILD					N/A				10Y	
	594 DIFFERENTIAL	PRESSURE TRANSMITTE	CCD/03-574										
1P45 N 0051A	EMERGENCY SERVICE WATER	ROSEMOUNT	CB-5	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	EMERGENCY CLOSED COOLING HX A FLOW	1153DB4PAN0016	MILD					0.20 SEC				10Y	
	604 FLOW TRANSMITTER		CCC/06-574										
1P45 N 0051B	EMERGENCY SERVICE WATER	ROSEMOUNT	CB-5	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	EMERGENCY CLOSED COOLING HX B FLOW	1153DB4PAN0016	MILD					0.20 SEC				10Y	
	604 FLOW TRANSMITTER		CCD/06-574										
1P45 N 0071A	EMERGENCY SERVICE WATER	ROSEMOUNT	DG-1	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	STBY DIESEL GEN A OUTLET	1153DB5PAN0016	MILD					0.20 SEC				10Y	
	604 FLOW TRANSMITTER		DGC/02-620										
1P45 N 0071B	EMERGENCY SERVICE WATER	ROSEMOUNT	DG-1	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	STBY DIESEL GEN B OUTLET	1153DB5PAN0016	MILD					0.20 SEC				10Y	
	604 FLOW TRANSMITTER		DGA/02-620										
1P45 N 0206	EMERGENCY SERVICE WATER	ROSEMOUNT	DG-1	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	HPCS DIESEL GEN HX OUTLET	1153DB4PAN0016	MILD					0.20 SEC				10Y	
	604 FLOW TRANSMITTER		DGC/01-620										
1P45 N 0250	EMERGENCY SERVICE WATER SYSTEM	ROSEMOUNT	AB-6	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	RHR HEAT EXCHANGER	1153DB5PAN0016	MILD					0.20 SEC				10Y	
	604 FLOW TRANSMITTER		AXB/09-574										
1P45 N 0252	EMERGENCY SERVICE WATER	ROSEMOUNT	CB-5	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	EMERGENCY CLOSED COOLING HX OUTLET	1153DB4PAN0016	MILD					0.20 SEC				10Y	
	604 FLOW TRANSMITTER		CCC/06-574										
1P57 N 002	SAFETY RELATED INSTRUMENT AIR SYSTEM	ROSEMOUNT	FB-1	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	HIGH PRESS SUPPLY	1153GB9PAN0016	MILD					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		IBE/05-599										
1P57 N 0020B	SAFETY RELATED INSTRUMENT AIR SYSTEM	ROSEMOUNT	AB-1	A	A4	J	YES	.003		YES	T	10Y	SP604-000-03
	HIGH PRESS SUPPLY	1153GB9PAN0016	MILD					0.20 SEC				10Y	
	604 PRESSURE TRANSMITTER		AXE/08-620										

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-606-00
MANUFACTURER'S QUALIFICATION REPORT NO. Test Plan 528-0994 REV. C
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Level Transmitter
MANUFACTURER/MODEL NO. Gould/3218
TESTED DEVICE MODEL NO. PD 3218

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-3	104°F	7,[illegible]31 Hours
AVERAGE	CT-3	87°F	322,115 Hours
MINIMUM	CT-3	62°F	3,211 Hours
ABNORMAL TEMP. TRANSIENTS (°F): Loss of HVAC	CT-3	131°F	49 Hours
RADIATION DOSE (RADS, TID)	CT-3	2.71×10^5 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 221°F/11.9 Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 10 Years
LIFE-LIMITING COMPONENT
TEST RADIATION DOSE (TID) 3.35×10^7 Rads Normal and Accident (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Monitor during test (Test Plan)
FUNCTION TIME (FT)	J (180 Days)	50 Days Extended by Analysis (Test Plan)
ACCURACY (ACC) (4)	See Attached Memo and Position Paper	
RESPONSE TIME (RT)	See Attached Memo and Position Paper	

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-3	184.6°F	260°F (Test Plan)	> 10%
PRESSURE (PSIG)	CT-3	12.0	17.6 (Test Plan)	> 10%
R.H. (%)	CT-3	100	100 (Test Plan)	N/A
SPRAY	N/A	N/A	30 Hours (Test Plan)	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	CT-3	1.8×10^7	3.35×10^7 (Test Plan) (2)	1.55×10^7

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch / 1/30/84
CHECKED BY Eddie B. Thomas 12-24-84
APPROVED BY [illegible] 12/19/84

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN A HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-606-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   See attached Memo and Position Paper.

5. Demonstrated values are derived from test plan. Test and review of Gould transmitters is expected to be completed March 31, 1984.

IMPACT OF QUALIFICATION TEST RESULTS ON INSTRUMENT ACCURACY REQUIREMENTS

This document discusses the establishment of instrument accuracy and response time requirements. It maintains that the performance specifications established by the instrument manufacturer will in the majority of situations adequately meet the requirements of the application. Under harsh environments instrument performance may degrade beyond the normal specification limits. When this occurs, the instrument applications must be reexamined to evaluate the effects on the process requirements.

Establishing Performance Requirements

In the early phase of the design process a system engineer coordinates the selection of instrumentation with the procurement engineer to meet the performance requirements of the system. For the majority of situations, this effort utilizes the specified catalog accuracy and the design is slanted by this pre-knowledge of what the instrumentation is capable of achieving (under normal operation).

In a few cases, a critical performance requirement is identified early in the design process and the equipment is then specified to meet this requirement.

Typically, a concern with the instrument meeting its intended function is likely to occur at some point later. These cases, such as a change in process condition or setpoint, an instrument elevation change or adding a new functional requirement, results in the instrument application being examined on a case-by-case basis. Rarely does this require procurement of a new instrument, and the existing device can be demonstrated to be adequate. The concept of using manufacturer's accuracy as a system requirement is, therefore, justified on the basis of this experience.

Evaluating Accuracy/Response Time Requirement

Specific requirements within the regulations for accuracy/response time are not common. R.G. 1.97 does provide accuracy requirements (factor of 2) for radiation monitoring equipment i.e, Note 7 is applicable to SP621 and Note 9 applies to SP622 equipment. The manufacturer's accuracy for this equipment meets these requirements.

FSAR Table 6.2.32 although listing isolation valve closure times reflects the design basis but doesn't establish it for closure time. Here again catalog response time is used for SP597 valves; however, in most cases this figure isn't significant because many valves are either normally closed or under remote manual control.

When the qualification accuracy is demonstrated to be worse than the catalog (or specified) accuracy then the disparity must be examined and resonciled.

The evaluation of the Post Accident Monitoring (PAM) transmitter which you have is one approach on a generic basis for an analog loop application.

Another example occurred recently during review of the Barton (SP598) report: The attached memo identifies the concern. While the details of final resolution have to be worked out, it appears possible to remedy extreme accuracy perturbations which occur during the harsh environment. One method is to account for these inaccuracies in establishing the process analytical limit before calculating the instrument setpoint. These cases must be evaluated individually to identify the critical parameters.

In other instances, the disagreements between required and demonstrated accuracy or response time are relatively minor and these adjustments can be evaluated with little effort.

Reviewing Results

Generally required system accuracy will be equivalent to catalog accuracy. Under normal or abnormal operation condition this figure is still valid. For harsh condition some instruments will require only minor adjustments to the required system accuracy. Certain devices, however, will require a more detailed analysis to demonstrate the instrument's performance is adequate for its intended application.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 09E606
SELECT :
SORT : 01
TITLE : EQRL SP606-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES TME DEMO H2/H2 DEMO	ACC/RT M LF/MI	QUALIFICATION SUMMARY
1C11 N 0012A	CONTROL ROD DRIVE HYDRAULIC CONTROL SCRAM DISCH VOLUME 606 184C4775 LEVEL TRANSMITTER	GOULD 3218	CT-3 HARSH C 0/05-620	D	A1	E	.010 .500 SEC H2		
1C11 N 0012B	CONTROL ROD DRIVE HYDRAULIC CONTROL SCRAM DISCH VOLUME 606 184C4775 LEVEL TRANSMITTER	GOULD 3218	CT-3 HARSH C 0/05-620	D	A1	E	.010 .500 SEC H2		
1C11 N 0012C	CONTROL ROD DRIVE HYDRAULIC CONTROL SCRAM DISCH VOLUME 606 184C4775 LEVEL TRANSMITTER	GOULD 3218	CT-3 HARSH C 0/13-620	D	A1	E	.010 .500 SEC H2		
1C11 N 0012D	CONTROL ROD DRIVE HYDRAULIC CONTROL SCRAM DISCH VOLUME 606 184C4775 LEVEL TRANSMITTER	GOULD 3218	CT-3 HARSH C 0/13-620	D	A1	E	.010 .500 SEC H2		
1C11 N 0017A	ROD CONTROL AND INFORMATION SYSTEM SCRAM DISCH VOLUME 606 184C4775 LEVEL TRANSMITTER	GOULD 3218	CT-3 HARSH C 0/05-620	D	A3	J	.017 .500 SEC H2		
1C11 N 0017B	ROD CONTROL AND INFORMATION SYSTEM SCRAM DISCH VOLUME 606 184C4775 LEVEL TRANSMITTER	GOULD 3218	CT-3 HARSH C 0/13-620	D	A3	J	.017 .500 SEC H2		
1E22 N 0055C	HIGH PRESSURE CORE SPRAY SYSTEM SUPPRESSION POOL LVL 606 184C4775 LEVEL TRANSMITTER	GOULD 3218	AB-6 MILD AXC/02-574	D	A4	F	.025 0001 SEC		
1E22 N 0055G	HIGH PRESSURE CORE SPRAY SYSTEM SUPPRESSION POOL LVL 606 184C4775 LEVEL TRANSMITTER	GOULD 3218	AB-6 MILD AXC/02-574	D	A4	F	.025 0001 SEC		
1E51 N 0036A	REACTOR CORE ISOLATION COOLING SUPPRESSION POOL 606 184C4775 LEVEL TRANSMITTER	GOULD 3218	AB-6 MILD AXD/01-574	D	A4	E	.010 0001 SEC		
1E51 N 0036E	REACTOR CORE ISOLATION COOLING SUPPRESSION POOL 606 184C4775 LEVEL TRANSMITTER	GOULD 3218	AB-6 MILD AXD/01-574	D	A4	E	.010 0001 SEC		

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-607-01-04
MANUFACTURER'S QUALIFICATION REPORT NO. AQR-67368 REV. 0
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Solenoid Valves
MANUFACTURER/MODEL NO. ASCO/NP8320A185E, NP832094E
TESTED DEVICE MODEL NO. NP831655E

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-4	147°F	13½ Hours
AVERAGE	AB-3	102°F	338,440 Hours
MINIMUM	AB-7	60°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
LOSS OF HVAC	AB-7	189°F	49 Hours
RADIATION DOSE (RADS, TID)	AB-4	3×10^5 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 250°F/18¼ Days
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/11 Years
LIFE-LIMITING COMPONENT Elastomeric Seal & Coils
TEST RADIATION DOSE (TID) 2.05×10^8 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Equipment Passed Functional Test After Each Aging Test
FUNCTION TIME (FT)	A (0-to-45 Secs.)	Test Extended to 180 Days Post-LOCA by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	.15 Seconds	Response Time is Insignificant Compared to the Response Time of Instrument Channel

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-7	310°F	450°F	140°F
PRESSURE (PSIG)	CT-3	12 PSIG	66 PSIG	54 PSIG
R.H (%)	CT-3	100%	100%	N/A
SPRAY	CT-3	Water Spray	Clear Water & Chem Spray	N/A
SUBMERGENCE	CT-3	N/A (Note 5)	N/A	N/A
RADIATION (RADS)	AB-4, CT-3	4.1×10^7 Rads (Note 6)	1.82×10^8 Rads (2)	>10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch / 3/16/84
CHECKED BY Eddie B. Thomas Jr. / 3-17-84
APPROVED BY K. A. Mathews / 3/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-607-01-04

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   See attached position paper "Impact of Qualification on Instrument Accuracy Requirements."

5. Instruments located above the flood level.

6. Deterioration for beta radiation is prevented by the metal flange holding the gasket in compression; therefore, the anticipated damage is not a failure factor.

IMPACT OF QUALIFICATION TEST RESULTS ON INSTRUMENT ACCURACY REQUIREMENTS

This document discusses the establishment of instrument accuracy and response time requirements. It maintains that the performance specifications established by the instrument manufacturer will in the majority of situations adequately meet the requirements of the application. Under harsh environments instrument performance may degrade beyond the normal specification limits. When this occurs, the instrument applications must be reexamined to evaluate the effects on the process requirements.

Establishing Performance Requirements

In the early phase of the design process a system engineer coordinates the selection of instrumentation with the procurement engineer to meet the performance requirements of the system. For the majority of situations, this effort utilizes the specified catalog accuracy and the design is slanted by this pre-knowledge of what the instrumentation is capable of achieving (under normal operation).

In a few cases, a critical performance requirement is identified early in the design process and the equipment is then specified to meet this requirement.

Typically, a concern with the instrument meeting its intended function is likely to occur at some point later. These cases, such as a change in process condition or setpoint, an instrument elevation change or adding a new functional requirement, results in the instrument application being examined on a case-by-case basis. Rarely does this require procurement of a new instrument, and the existing device can be demonstrated to be adequate. The concept of using manufacturer's accuracy as a system requirement is, therefore, justified on the basis of this experience.

Evaluating Accuracy/Response Time Requirement

Specific requirements within the regulations for accuracy/response time are not common. R.G. 1.97 does provide accuracy requirements (factor of 2) for radiation monitoring equipment i.e, Note 7 is applicable to SP621 and Note 9 applies to SP622 equipment. The manufacturer's accuracy for this equipment meets these requirements.

FSAR Table 6.2.32 although listing isolation valve closure times reflects the design basis but doesn't establish it for closure time. Here again catalog response time is used for SP597 valves; however, in most cases this figure isn't significant because many valves are either normally closed or under remote manual control.

When the qualification accuracy is demonstrated to be worse than the catalog (or specified) accuracy then the disparity must be examined and resonciled.

The evaluation of the Post Accident Monitoring (PAM) transmitter which you have is one approach on a generic basis for an analog loop application.

Another example occurred recently during review of the Barton (SP598) report: The attached memo identifies the concern. While the details of final resolution have to be worked out, it appears possible to remedy extreme accuracy perturbations which occur during the harsh environment. One method is to account for these inaccuracies in establishing the process analytical limit before calculating the instrument setpoint. These cases must be evaluated individually to identify the critical parameters.

In other instances, the disagreements between required and demonstrated accuracy or response time are relatively minor and these adjustments can be evaluated with little effort.

Reviewing Results

Generally required system accuracy will be equivalent to catalog accuracy. Under normal or abnormal operation condition this figure is still valid. For harsh condition some instruments will require only minor adjustments to the required system accuracy. Certain devices, however, will require a more detailed analysis to demonstrate the instrument's performance is adequate for its intended application.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP607-001-04 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP607-001-04

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	LF/MI	QUALIFICATION SUMMARY
1B21 F 0451	NUCLEAR BOILER SYSTEM SOLENOID FOR VALVE F069 60701 SOLENOID	ASCO NP8320A185E	AB-7 HARSH AXB/04-620	A	A1	A	YES	N/A 0.15 SEC		YES	T	40Y 40Y	SP607-001-04
1B33 F 0419	REACTOR RECIRCULATION SYSTEM CONTROLS OPERATING AIR TO F019 60701 SOLENOID VALVE	ASCO NP832094E	CT-3 HARSH C 0/02-620	A	A1	A	YES	N/A 0.15 SEC		YES	T	40Y 11Y	SP607-001-04
1B33 F 0420	REACTOR RECIRCULATION SYSTEM CONTROLS OPERATING AIR TO F020 60701 SOLENOID	ASCO NP832094E	CT-3 HARSH C 0/02-620	A	A1	A	YES	N/A 0.15 SEC		YES	T	40Y 40Y	SP607-001-04
1E12 F 0451A	RESIDUAL HEAT REMOVAL SYSTEM CONTROLS OPERATING AIR TO F051A 60701 SOLENOID VALVE	ASCO NP8320A185E	AB-4 HARSH AXB/06-620	A	A1	A	YES	N/A 0.15 SEC		YES	T	40Y 40Y	SP607-001-04
1E12 F 0451B	RESIDUAL HEAT REMOVAL SYSTEM CONTROLS OPERATING AIR TO F051B 60701 SOLENOID VALVE	ASCO NP8320A185E	AB-4 HARSH AXB/04-620	A	A1	A	YES	N/A 0.15 SEC		YES	T	40Y 40Y	SP607-001-04
1E12 F 0465A	RESIDUAL HEAT REMOVAL SYSTEM CONTROLS OPERATING AIR TO F065A 60701 SOLENOID VALVE	ASCO NP8320A185E	AB-4 HARSH AXB/06-574	A	A1	A	YES	N/A 0.15 SEC		YES	T	40Y 40Y	SP607-001-04
1E12 F 0465B	RESIDUAL HEAT REMOVAL SYSTEM CONTROLS OPERATING AIR TO F065B 60701 SOLENOID VALVE	ASCO NP8320A185E	AB-4 HARSH AXC/04-574	A	A1	A	YES	N/A 0.15 SEC		YES	T	40Y 40Y	SP607-001-04
1E51 F 0404	REACTOR CORE ISOLATION COOLING CONTROLS OPERATING AIR TO F004 60701 SOLENOID VALVE	ASCO NP8320A185E	AB-3 HARSH AXB/05-574	A	A1	A	YES	N/A 0.15 SEC		YES	T	40Y 40Y	SP607-001-04
1E51 F 0405	REACTOR CORE ISOLATION COOLING CONTROLS OPERATING AIR TO F005 60701 SOLENOID VALVE	ASCO NP8320A185E	AB-3 HARSH AXB/05-574	A	A1	A	YES	N/A 0.15 SEC		YES	T	40Y 40Y	SP607-001-04
1E51 F 0425	REACTOR CORE ISOLATION COOLING CONTROLS OPERATING AIR TO F025 60701 SOLENOID VALVE	ASCO NP8320A185E	AB-3 HARSH AXC/05-574	A	A1	A	YES	N/A 0.15 SEC		YES	E	40Y 40Y	SP607-001-04
1E51 F 0426	REACTOR CORE ISOLATION COOLING CONTROLS OPERATING AIR TO F026 60701 SOLENOID VALVE	ASCO NP8320A185E	AB-3 HARSH AXC/05-574	A	A1	A	YES	N/A 0.15 SEC		YES	E	40Y 40Y	SP607-001-04

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP607-001-04 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP607-001-04

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1E51 F 0454	REACTOR CORE ISOLATION COOLING	ASCO	AB-3	A	A1	A	YES	N/A		YES	E	40Y	SP607-001-04
	CONTROLS OPERATING AIR TO F054	NP8320A185E	HARSH					0.15 SEC				40Y	
	60701 SOLENOID VALVE		AXC/05-574										
1P51 F 0152	SERVICE AIR SYSTEM	ASCO	FB-1	A	A4	A	YES	N/A		YES	T	40Y	SP607-001-04
	CONTROLS OPERATING AIR TO F150	NP8320A185	MILD					0.15 SEC				40Y	
	60701 SOLENOID VALVE		IBC/03-599										

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-621-00
MANUFACTURER'S QUALIFICATION REPORT NO. Test Plan 57654-1 REV. A
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Post-Accident Rad Monitor Detector
MANUFACTURER/MODEL NO. Kaman/KDA-HR
TESTED DEVICE MODEL NO. KDI-1000

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	DW-2	135°F	8,401 Hours
AVERAGE	DW-2	134°F	338,149 Hours
MINIMUM	DW-2	122°F	3,501 Hours
ABNORMAL TEMP. TRANSIENTS (°F): (Scram)	DW-2	141/135°F	600 @ 30 Min.
Loss of HVAC	DW-2	136/135°F	49 Hours
SRVD	CT-1	120°F	108 @ 5 Hours
RADIATION DOSE (RADS, TID)	DW-2	4.5×10^7 (7) (2)	40 Years

(6) ACCELERATED AGING TEMP./TIMES 140°C/120 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years
LIFE-LIMITING COMPONENT
TEST RADIATION DOSE (TID) 2.0×10^7 Rads (Normal) (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED (6)
EQUIPMENT CATEGORY (EC)	A1	Monitor during test
FUNCTION TIME (FT)	I (100 Days)	39 Days - Extended by analysis
ACCURACY (ACC) (4)	See Attached	Note 5
RESPONSE TIME (RT)	See Attached	Note 5

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED (6)	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-2	330°F	382°F	52
PRESSURE (PSIG)	DW-2	22.1	70	47.9
R.H. (%)	DW-2	100	100	N/A
SPRAY	CT-1	30 Hours	24 Hours	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	DW-2	2.0×10^8 (8)	1.98×10^8 (2)	

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 1/30/84
CHECKED BY Eddie B. Thomas Jr. 12-21-84
APPROVED BY R. A. Mathews 13/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-621-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   Regulatory Guide 1.97

5. Accuracy and response time requirement:

   $\pm$ 25% Detector Accuracy to 10^6 Rads

   Factor of 2 Detector Accuracy to 10^8 Rads

   $\pm$ 20% Energy Response. Also, see attached position paper.

6. Demonstrated values are derived from test plan. Test and review of Kaman's instruments are expected to be completed 7/30/84.

7. Value is for gamma radiation only.

   Neutron fluence is = 1.8×10^{15} Ntn/CM^2 (40-year TID).

8. Beta radiation is not significant since all parts susceptible to radiation are shielded by metal enclosures.

QUALIFICATION SUMMARY (FILE NO.) SP-621-00

SUPPLEMENTAL NOTES (Continued):

9. Per GAI memo dated January 18, 1983, J. Tate to J. K. Coale.

IMPACT OF QUALIFICATION TEST RESULTS ON INSTRUMENT ACCURACY REQUIREMENTS

This document discusses the establishment of instrument accuracy and response time requirements. It maintains that the performance specifications established by the instrument manufacturer will in the majority of situations adequately meet the requirements of the application. Under harsh environments instrument performance may degrade beyond the normal specification limits. When this occurs, the instrument applications must be reexamined to evaluate the effects on the process requirements.

Establishing Performance Requirements

In the early phase of the design process a system engineer coordinates the selection of instrumentation with the procurement engineer to meet the performance requirements of the system. For the majority of situations, this effort utilizes the specified catalog accuracy and the design is slanted by this pre-knowledge of what the instrumentation is capable of achieving (under normal operation).

In a few cases, a critical performance requirement is identified early in the design process and the equipment is then specified to meet this requirement.

Typically, a concern with the instrument meeting its intended function is likely to occur at some point later. These cases, such as a change in process condition or setpoint, an instrument elevation change or adding a new functional requirement, results in the instrument application being examined on a case-by-case basis. Rarely does this require procurement of a new instrument, and the existing device can be demonstrated to be adequate. The concept of using manufacturer's accuracy as a system requirement is, therefore, justified on the basis of this experience.

Evaluating Accuracy/Response Time Requirement

Specific requirements within the regulations for accuracy/response time are not common. R.G. 1.97 does provide accuracy requirements (factor of 2) for radiation monitoring equipment i.e, Note 7 is applicable to SP621 and Note 9 applies to SP622 equipment. The manufacturer's accuracy for this equipment meets these requirements.

FSAR Table 6.2.32 although listing isolation valve closure times reflects the design basis but doesn't establish it for closure time. Here again catalog response time is used for SP597 valves; however, in most cases this figure isn't significant because many valves are either normally closed or under remote manual control.

When the qualification accuracy is demonstrated to be worse than the catalog (or specified) accuracy then the disparity must be examined and resonciled.

The evaluation of the Post Accident Monitoring (PAM) transmitter which you have is one approach on a generic basis for an analog loop application.

Another example occurred recently during review of the Barton (SP598) report: The attached memo identifies the concern. While the details of final resolution have to be worked out, it appears possible to remedy extreme accuracy perturbations which occur during the harsh environment. One method is to account for these inaccuracies in establishing the process analytical limit before calculating the instrument setpoint. These cases must be evaluated individually to identify the critical parameters.

In other instances, the disagreements between required and demonstrated accuracy or response time are relatively minor and these adjustments can be evaluated with little effort.

Reviewing Results

Generally required system accuracy will be equivalent to catalog accuracy. Under normal or abnormal operation condition this figure is still valid. For harsh condition some instruments will require only minor adjustments to the required system accuracy. Certain devices, however, will require a more detailed analysis to demonstrate the instrument's performance is adequate for its intended application.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 09E621
SELECT :
SORT : 01
TITLE : EQRL SP621-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD EC CAT ELEV	FT OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO DEMO	QUALIFICATION M LF/MI SUMMARY
1D19 J 0100	POST ACCIDENT RAD MON DRYWELL & REACTOR BLDG A CHANNEL 621 MICROCOMPUTER	KAMAN KEM-A	CB-4 MILD CCD/02-599	C	A4 I	N/A	N/A	T
1D19 J 0200	POST ACCIDENT RAD MON DRYWELL & REACTOR BLDG B CHANNEL 621 MICROCOMPUTER	KAMAN KEM-A	CB-4 MILD CCD/02-599	C	A4 I	N/A	N/A	T
1D19 K 0100	POST ACCIDENT RAD MON DRYWELL & REACTOR BLDG A CHANNEL 621 READOUT	KAMAN KERIC	CB-1 MILD CCB/04-654	C	A4 I	N/A	N/A	T
1D19 K 0200	POST ACCIDENT RAD MON DRYWELL & REACTOR BLDG B CHANNEL 621 READOUT	KAMAN KERIC	CB-1 MILD CCB/04-654	C	A4 I	N/A	N/A	T
1D19 N 0100A	POST ACCIDENT RAD MON DRYWELL A CHANNEL 621 RADIATION MONITOR	KAMAN KDA-HR DETECTOR	DW-2 HARSH C I/13-620	C	A1 I	.250 H2	N/A	T
1D19 N 0100B	POST ACCIDENT RAD MON DRYWELL B CHANNEL 621 RADIATION MONITOR	KAMAN KDA-HR DETECTOR	DW-2 HARSH C I/15-620	C	A1 I	.250 H2	N/A	T
1D19 N 0200A	POST ACCIDENT RAD MON REACTOR BLDG A CHANNEL 621 RADIATION MONITOR	KAMAN KDA-HR DETECTOR	CT-1 HARSH C 0/10-689	C	A1 I	.250 H2	N/A	T
1D19 N 0200B	POST ACCIDENT RAD MON REACTOR BLDG B CHANNEL 621 RADIATION MONITOR	KAMAN KDA-HR DETECTOR	CT-1 HARSH C 0/12-689	C	A1 I	.250 H2	N/A	T

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-622-00
MANUFACTURER'S QUALIFICATION REPORT NO. 16435 REV. 1
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Post-Accident Rad Monitor Sample Panel
MANUFACTURER/MODEL NO. Kaman/KMG-HRH
TESTED DEVICE MODEL NO. KMG-HRH

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON. ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	TB-3	109°F	8,410 Hours
AVERAGE	TB-3	105°F	338,486 Hours
MINIMUM	TB-3	60°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
RADIATION DOSE (RADS, TID)	TB-3	1.75×10^2 (2)	40 Years

ACCELERATED AGING TEMP./TIMES Applies to most components - 100°C/816 Hours - See report for details.
QUALIFIED LIFE/MAINTENANCE INTERVAL 1.5-10 Years dependent on component.
LIFE-LIMITING COMPONENT See test report - Components replaced every 1.5-10 Years
TEST RADIATION DOSE (TID) 1×10^5 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Continuous operation under normal conditions -
FUNCTION TIME (FT)	I (100 Days)	Accident temperature is the same as normal temp.
ACCURACY (ACC) (4)	Note 5	
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON. ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	TB-3	109°F	185°F (85°C)	76
PRESSURE (PSIG)	TB-3	Atmos.	Atmos.	N/A
R.H. (%)	TB-3	90	Atmos.	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	TB-3	2.8×10^2	1×10^5 Rads (2)	9.972×10^4

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV. NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 1/30/84
CHECKED BY Eddie B. Thomas Jr. 12-21-84
APPROVED BY [illegible] 3/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-622-00

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   Regulatory Guide 1.97.

5. Accuracy:

   $\pm$ 25% Detector Accuracy up to 10^6 Rads

   Factor of 2 Detector Accuracy 10^6 - 10^8 Rads

   $\pm$ 20% Energy Response. Also, see attached position paper.

IMPACT OF QUALIFICATION TEST RESULTS ON INSTRUMENT ACCURACY REQUIREMENTS

This document discusses the establishment of instrument accuracy and response time requirements. It maintains that the performance specifications established by the instrument manufacturer will in the majority of situations adequately meet the requirements of the application. Under harsh environments instrument performance may degrade beyond the normal specification limits. When this occurs, the instrument applications must be reexamined to evaluate the effects on the process requirements.

Establishing Performance Requirements

In the early phase of the design process a system engineer coordinates the selection of instrumentation with the procurement engineer to meet the performance requirements of the system. For the majority of situations, this effort utilizes the specified catalog accuracy and the design is slanted by this pre-knowledge of what the instrumentation is capable of achieving (under normal operation).

In a few cases, a critical performance requirement is identified early in the design process and the equipment is then specified to meet this requirement.

Typically, a concern with the instrument meeting its intended function is likely to occur at some point later. These cases, such as a change in process condition or setpoint, an instrument elevation change or adding a new functional requirement, results in the instrument application being examined on a case-by-case basis. Rarely does this require procurement of a new instrument, and the existing device can be demonstrated to be adequate. The concept of using manufacturer's accuracy as a system requirement is, therefore, justified on the basis of this experience.

Evaluating Accuracy/Response Time Requirement

Specific requirements within the regulations for accuracy/response time are not common. R.G. 1.97 does provide accuracy requirements (factor of 2) for radiation monitoring equipment i.e, Note 7 is applicable to SP621 and Note 9 applies to SP622 equipment. The manufacturer's accuracy for this equipment meets these requirements.

FSAR Table 6.2.32 although listing isolation valve closure times reflects the design basis but doesn't establish it for closure time. Here again catalog response time is used for SP597 valves; however, in most cases this figure isn't significant because many valves are either normally closed or under remote manual control.

When the qualification accuracy is demonstrated to be worse than the catalog (or specified) accuracy then the disparity must be examined and resonciled.

The evaluation of the Post Accident Monitoring (PAM) transmitter which you have is one approach on a generic basis for an analog loop application.

Another example occurred recently during review of the Barton (SP598) report: The attached memo identifies the concern. While the details of final resolution have to be worked out, it appears possible to remedy extreme accuracy perturbations which occur during the harsh environment. One method is to account for these inaccuracies in establishing the process analytical limit before calculating the instrument setpoint. These cases must be evaluated individually to identify the critical parameters.

In other instances, the disagreements between required and demonstrated accuracy or response time are relatively minor and these adjustments can be evaluated with little effort.

Reviewing Results

Generally required system accuracy will be equivalent to catalog accuracy. Under normal or abnormal operation condition this figure is still valid. For harsh condition some instruments will require only minor adjustments to the required system accuracy. Certain devices, however, will require a more detailed analysis to demonstrate the instrument's performance is adequate for its intended application.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 09E622
SELECT :
SORT : 01
TITLE : EQRL SP622-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT OPER DEMO SEAL	ACC RES TMP H2/H2 DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1D19 J 0300	POST ACCIDENT RAD MON		KAMAN	CB-4	C	A4	I	N/A		T	
	MAIN PLANT VENT GAS INT & HI		KEM	MILD				N/A			
	622	GAS RAD MONITOR	MICROCOMPUTER	CCD/02-599							
1D19 J 0400	POST ACCIDENT RAD MON		KAMAN	CB-4	C	A4	I	N/A		T	
	OFF GAS VENT GAS INT & HI		KEM	MILD				N/A			
	622	GAS RAD MONITOR	MICROCOMPUTER	CCD/02-599							
1D19 J 0500	POST ACCIDENT RAD MON		KAMAN	CB-4	C	A4	I	N/A		T	
	TB/HB VENT GAS INT & HI		KEM	MILD				N/A			
	622	GAS RAD MONITOR	MICROCOMPUTER	CCD/02-599							
1D19 K 0300	POST ACCIDENT RAD MON		KAMAN	CB-1	C	A4	I	N/A		T	
	MAIN PLANT VENT GAS INT & HI		KERIC	MILD				N/A			
	622	READOUT		CCB/04-654							
1D19 K 0400	POST ACCIDENT RAD MON		KAMAN	CB-1	C	A4	I	N/A		T	
	OFF GAS VENT GAS INT & HI		KERIC	MILD				N/A			
	622	READOUT		CCB/04-654							
1D19 K 0500	POST ACCIDENT RAD MON		KAMAN	CB-1	C	A4	I	N/A		T	
	TB/HB VENT GAS INT & HI		KERIC	MILD				N/A			
	622	READOUT		CCB/04-654							
1D19 P 0300	POST ACCIDENT RAD MON		KAMAN	CB-3	B	A4	I	.300		T	
	MAIN PLANT VENT GAS RAD MON		KMG-HRH	MILD				N/A			
	622	SAMPLE PANEL		CCB/04-679							
1D19 P 0400	POST ACCIDENT RAD MON		KAMAN	TB-3	B	A1	I	.300		T	
	OFF GAS VENT GAS RAD MON		KMG-HRH	HARSH				N/A			
	622	SAMPLE PANEL		TBI/02-620							
1D19 P 0500	POST ACCIDENT RAD MON		KAMAN	HB-1	B	A4	I	.300		T	
	TB/HB VENT GAS RAD MON		KMG-HRH	MILD				N/A			
	622	SAMPLE PANEL		HBD/03-667							

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-627-00-01
MANUFACTURER'S QUALIFICATION REPORT NO. A-555-83 REV. 1
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Hydrogen Ignitor Assemblies
MANUFACTURER/MODEL NO. 6043
TESTED DEVICE MODEL NO. 6043

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	DW-1	135°F	8,401 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-4	133°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	141°F	300 Hours
SRVD	CT-1	120°F	1,836 Hours
RADIATION DOSE (RADS, TID)	DW-1	2.8×10^7 (6) (2)	40 Years

ACCELERATED AGING TEMP./TIMES 115°C/57.62 Days (5)
QUALIFIED LIFE/MAINTENANCE INTERVAL 20 Years
LIFE-LIMITING COMPONENT Replace Junction Box Wire Penetration Seal after 20 Years
TEST RADIATION DOSE (TID) 5.0×10^7 γ 1.1×10^9 β (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED (5)
EQUIPMENT CATEGORY (EC)	A1	Energized and Loaded Rated Voltage and Current
FUNCTION TIME (FT)	7 Days	7 Days 11 Hours
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED (5)	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	330°F (5)	
PRESSURE (PSIG)	DW-1	22.1	30	
R.H. (%)	DW-1	100% Steam Air	100% Steam	N/A
SPRAY	DW-1	Yes		N/A
SUBMERGENCE	DW-1	Yes	30 Seconds/30 Seconds	N/A
RADIATION (RADS)	DW-1	2.8×10^8 γ (7)	5.0×10^7 γ (8) (2)	

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY Jeff Smith / 2-2-84
CHECKED BY Eddie B. Thomas Jr. 12-16-84
APPROVED BY [illegible] 12/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-627-00-01

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. The hydrogen ignitors at this point are considered not to be qualified for service at the Perry Nuclear Power Plant. However, further analysis or testing on accident temperatures and radiation will be done to establish qualification.

6. The requirement neutron fluence is $1.0 \times 10^{15} \mu Tn/CM^2$ (40-Year TID).

7. The required beta radiation is 2.9×10^8 accident.

8. The demonstrated Beta radiation is 1.1×10^9.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 09E627
SELECT :
SORT : 01
TITLE : EQRL SP627-00-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD ELEV	EC FT CAT	OPER DEMO SEAL	ACC RES TME H2/H2 DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1M56 S 0001	HYDROGEN IGNITION SYSTEM CONTROL OF HYDROGEN IN DRYWELL-CONT. 627 HYDROGEN IGNITER	POWER SYSTEMS INC. 6043	DW-1 HARSH C I/00-592	D	A1	J LATER YES	N/A N/A H2 LATER	LATER	T	
1M56 S 0002	HYDROGEN IGNITION SYSTEM CONTROL OF HYDROGEN IN DRYWELL-CONT. 627 HYDROGEN IGNITER	POWER SYSTEMS INC. 6043	DW-1 HARSH C I/02-592	D	A1	J LATER YES	N/A N/A H2 LATER	LATER	T	
1M56 S 0003	HYDROGEN IGNITION SYSTEM CONTROL OF HYDROGEN IN DRYWELL-CONT. 627 HYDROGEN IGNITER	POWER SYSTEMS INC. 6043	DW-1 HARSH C I/05-574	D	A1	J LATER YES	N/A N/A H2 LATER	LATER	T	
1M56 S 0004	HYDROGEN IGNITION SYSTEM CONTROL OF HYDROGEN IN DRYWELL-CONT. 627 HYDROGEN IGNITER	POWER SYSTEMS INC. 6043	DW-1 HARSH C I/08-574	D	A1	J LATER YES	N/A N/A H2 LATER	LATER	T	
1M56 S 0005	HYDROGEN IGNITION SYSTEM CONTROL OF HYDROGEN IN DRYWELL-CONT. 627 HYDROGEN IGNITER	POWER SYSTEMS INC. 6043	DW-1 HARSH C I/11-574	D	A1	J LATER YES	N/A N/A H2 LATER	LATER	T	
1M56 S 0006	HYDROGEN IGNITION SYSTEM CONTROL OF HYDROGEN IN DRYWELL-CONT. 627 HYDROGEN IGNITER	POWER SYSTEMS INC. 6043	DW-1 HARSH C I/14-574	D	A1	J LATER YES	N/A N/A H2 LATER	LATER	T	
1M56 S 0007	HYDROGEN IGNITION SYSTEM CONTROL OF HYDROGEN IN DRYWELL-CONT. 627 HYDROGEN IGNITER	POWER SYSTEMS INC. 6043	DW-1 HARSH C I/16-574	D	A1	J LATER YES	N/A N/A H2 LATER	LATER	T	
1M56 S 0008	HYDROGEN IGNITION SYSTEM CONTROL OF HYDROGEN IN DRYWELL-CONT. 627 HYDROGEN IGNITER	POWER SYSTEMS INC. 6043	DW-1 HARSH C I/01-620	D	A1	J LATER YES	N/A N/A H2 LATER	LATER	T	
1M56 S 0009	HYDROGEN IGNITION SYSTEM CONTROL OF HYDROGEN IN DRYWELL-CONT. 627 HYDROGEN IGNITER	POWER SYSTEMS INC. 6043	DW-1 HARSH C I/01-620	D	A1	J LATER YES	N/A N/A H2 LATER	LATER	T	
1M56 S 0010	HYDROGEN IGNITION SYSTEM CONTROL OF HYDROGEN IN DRYWELL-CONT. 627 HYDROGEN IGNITER	POWER SYSTEMS INC. 6043	DW-1 HARSH C I/04-620	D	A1	J LATER YES	N/A N/A H2 LATER	LATER	T	
1M56 S 0011	HYDROGEN IGNITION SYSTEM CONTROL OF HYDROGEN IN DRYWELL-CONT. 627 HYDROGEN IGNITER	POWER SYSTEMS INC. 6043	DW-1 HARSH C I/01-630	D	A1	J LATER YES	N/A N/A H2 LATER	LATER	T	

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 09E627
SELECT :
SORT : 01
TITLE : EQRL SP627-00-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1M56 S 0012	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-1	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C I/04-630				YES	H2		LATER		
1M56 S 0013	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-1	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C I/07-630				YES	H2		LATER		
1M56 S 0014	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-1	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C I/11-630				YES	H2		LATER		
1M56 S 0015	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-1	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C I/11-630				YES	H2		LATER		
1M56 S 0016	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-1	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C I/01-652				YES	H2		LATER		
1M56 S 0017	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-1	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C I/02-652				YES	H2		LATER		
1M56 S 0018	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-1	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C I/01-660				YES	H2		LATER		
1M56 S 0019	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-1	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C I/02-660				YES	H2		LATER		
1M56 S 0020	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-1	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C I/05-660				YES	H2		LATER		
1M56 S 0021	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-1	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C I/07-660				YES	H2		LATER		
1M56 S 0022	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-1	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C I/12-660				YES	H2		LATER		

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E627 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP627-00-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO DEMO	QUALIFICATION M LF/MI SUMMARY
1M56 S 0023	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-2	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH				N/A		
	627	HYDROGEN IGNITER		C 0/02-599			YES	H2	LATER	
1M56 S 0024	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-2	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH				N/A		
	627	HYDROGEN IGNITER		C 0/04-599			YES	H2	LATER	
1M56 S 0025	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-2	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH				N/A		
	627	HYDROGEN IGNITER		C 0/02-620			YES	H2	LATER	
1M56 S 0026	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-2	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH				N/A		
	627	HYDROGEN IGNITER		C 0/04-620			YES	H2	LATER	
1M56 S 0027	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-2	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH				N/A		
	627	HYDROGEN IGNITER		C 0/10-599			YES	H2	LATER	
1M56 S 0028	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-2	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH				N/A		
	627	HYDROGEN IGNITER		C 0/07-620			YES	H2	LATER	
1M56 S 0029	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-2	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH				N/A		
	627	HYDROGEN IGNITER		C 0/11-620			YES	H2	LATER	
1M56 S 0030	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-2	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH				N/A		
	627	HYDROGEN IGNITER		C 0/12-620			YES	H2	LATER	
1M56 S 0031	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-6	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH				N/A		
	627	HYDROGEN IGNITER		C 0/01-620			YES	H2	LATER	
1M56 S 0032	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-4	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH				N/A		
	627	HYDROGEN IGNITER		C 0/07-620			YES	H2	LATER	
1M56 S 0033	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-4	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH				N/A		
	627	HYDROGEN IGNITER		C 0/09-620			YES	H2	LATER	

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E627 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EGRL SP627-00-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI SUMMARY
1M56 S 0034	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-4	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A		
	627 HYDROGEN IGNITER		C 0/17-620			YES	H2	LATER	
1M56 S 0035	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-4	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A		
	627 HYDROGEN IGNITER		C 0/02-620			YES	H2	LATER	
1M56 S 0036	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-4	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A		
	627 HYDROGEN IGNITER		C 0/06-620			YES	H2	LATER	
1M56 S 0037	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-4	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A		
	627 HYDROGEN IGNITER		C 0/03-642			YES	H2	LATER	
1M56 S 0038	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-4	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A		
	627 HYDROGEN IGNITER		C 0/06-642			YES	H2	LATER	
1M56 S 0039	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-4	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A		
	627 HYDROGEN IGNITER		C 0/15-642			YES	H2	LATER	
1M56 S 0040	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-6	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A		
	627 HYDROGEN IGNITER		C I/01-642			YES	H2	LATER	
1M56 S 0041	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-4	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A		
	627 HYDROGEN IGNITER		C 0/02-642			YES	H2	LATER	
1M56 S 0042	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-5	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A		
	627 HYDROGEN IGNITER		C 0/04-642			YES	H2	LATER	
1M56 S 0043	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-5	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A		
	627 HYDROGEN IGNITER		C 0/05-642			YES	H2	LATER	
1M56 S 0044	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-5	D	A1	J LATER	N/A	LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A		
	627 HYDROGEN IGNITER		C 0/04-652			YES	H2	LATER	

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E627 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP627-00-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI SUMMARY
1M56 S 0045	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C 0/05-652				YES	H2		LATER		
1M56 S 0046	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-8	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C 0/02-652				YES	H2		LATER		
1M56 S 0047	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-7	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C 0/05-664				YES	H2		LATER		
1M56 S 0048	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-7	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C 0/02-664				YES	H2		LATER		
1M56 S 0049	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-7	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C 0/05-664				YES	H2		LATER		
1M56 S 0050	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-7	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C 0/07-664				YES	H2		LATER		
1M56 S 0051	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-7	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C 0/11-664				YES	H2		LATER		
1M56 S 0052	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-7	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C 0/13-664				YES	H2		LATER		
1M56 S 0053	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C 0/01-664				YES	H2		LATER		
1M56 S 0054	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C 0/17-664				YES	H2		LATER		
1M56 S 0055	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A				
	627	HYDROGEN IGNITER		C 0/03-664				YES	H2		LATER		

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E627 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP627-00-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1M56 S 0056	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH					N/A				
	627 HYDROGEN IGNITER		C 0/04-664				YES	H2		LATER		
1M56 S 0057	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH					N/A				
	627 HYDROGEN IGNITER		C 0/03-686				YES	H2		LATER		
1M56 S 0058	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH					N/A				
	627 HYDROGEN IGNITER		C 0/04-686				YES	H2		LATER		
1M56 S 0059	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH					N/A				
	627 HYDROGEN IGNITER		C 0/04-686				YES	H2		LATER		
1M56 S 0060	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH					N/A				
	627 HYDROGEN IGNITER		C 0/05-686				YES	H2		LATER		
1M56 S 0061	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-6	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH					N/A				
	627 HYDROGEN IGNITER		C 0/02-664				YES	H2		LATER		
1M56 S 0062	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-7	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH					N/A				
	627 HYDROGEN IGNITER		C 0/07-664				YES	H2		LATER		
1M56 S 0063	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-7	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH					N/A				
	627 HYDROGEN IGNITER		C 0/01-689				YES	H2		LATER		
1M56 S 0064	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-4	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH					N/A				
	627 HYDROGEN IGNITER		C 0/07-689				YES	H2		LATER		
1M56 S 0065	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-4	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH					N/A				
	627 HYDROGEN IGNITER		C 0/11-689				YES	H2		LATER		
1M56 S 0066	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-7	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH					N/A				
	627 HYDROGEN IGNITER		C 0/12-689				YES	H2		LATER		

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E627 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP627-00-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI SUMMARY
1M56 S 0067	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A		LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/01-689			YES	H2	LATER		
1M56 S 0068	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A		LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/01-689			YES	H2	LATER		
1M56 S 0069	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A		LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/01-715			YES	H2	LATER		
1M56 S 0070	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A		LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/01-715			YES	H2	LATER		
1M56 S 0071	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A		LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0 .15			YES	H2	LATER		
1M56 S 0072	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A		LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/04-715			YES	H2	LATER		
1M56 S 0073	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A		LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/06-715			YES	H2	LATER		
1M56 S 0074	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A		LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/07-715			YES	H2	LATER		
1M56 S 0075	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A		LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/11-715			YES	H2	LATER		
1M56 S 0076	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A		LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/11-715			YES	H2	LATER		
1M56 S 0077	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A		LATER	T
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/12-715			YES	H2	LATER		

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E627 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP627-00-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD EC CAT ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI DEMO	SUMMARY
1M56 S 0078	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/14-715			YES	H2	LATER		
1M56 S 0079	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/01-689			YES	H2	LATER		
1M56 S 0080	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/01-689			YES	H2	LATER		
1M56 S 0081	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/01-745			YES	H2	LATER		
1M56 S 0082	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/01-745			YES	H2	LATER		
1M56 S 0083	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/03-745			YES	H2	LATER		
1M56 S 0084	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/05-745			YES	H2	LATER		
1M56 S 0085	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/07-745			YES	H2	LATER		
1M56 S 0086	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/07-745			YES	H2	LATER		
1M56 S 0087	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/11-745			YES	H2	LATER		
1M56 S 0088	HYDROGEN IGNITION SYSTEM	POWER SYSTEMS INC.	CT-1	D	A1	J LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.	6043	HARSH				N/A			
	627 HYDROGEN IGNITER		C 0/13-745			YES	H2	LATER		

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 09E627
SELECT :
SORT : 01
TITLE : EQRL SP627-00-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI DEMO	SUMMARY
1M56 S 0089	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-4	D	A1	J	LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A			
	627	HYDROGEN IGNITER		C 0/01-689				YES	H2	LATER		
1M56 S 0090	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	DW-4	D	A1	J	LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A			
	627	HYDROGEN IGNITER		C 0/09-689				YES	H2	LATER		
1M56 S 0091	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-4	D	A1	J	LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A			
	627	HYDROGEN IGNITER		C 0/08-620				YES	H2	LATER		
1M56 S 0092	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-4	D	A1	J	LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A			
	627	HYDROGEN IGNITER		C 0/08-620				YES	H2	LATER		
1M56 S 0093	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-2	D	A1	J	LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A			
	627	HYDROGEN IGNITER		C 0/01-599				YES	H2	LATER		
1M56 S 0094	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-2	D	A1	J	LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A			
	627	HYDROGEN IGNITER		C 0/01-599				YES	H2	LATER		
1M56 S 0095	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-2	D	A1	J	LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A			
	627	HYDROGEN IGNITER		C 0/17-599				YES	H2	LATER		
1M56 S 0096	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-2	D	A1	J	LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A			
	627	HYDROGEN IGNITER		C 0/17-599				YES	H2	LATER		
1M56 S 0097	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-4	D	A1	J	LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A			
	627	HYDROGEN IGNITER		C 0/15-620				YES	H2	LATER		
1M56 S 0098	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A			
	627	HYDROGEN IGNITER		C 0/17-664				YES	H2	LATER		
1M56 S 0099	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A	LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH					N/A			
	627	HYDROGEN IGNITER		C 0/01-664				YES	H2	LATER		

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 09E627
SELECT :
SORT : 01
TITLE : EQRL SP627-00-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT	M LF/MI	QUALIFICATION SUMMARY
1M56 S 0100	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH							N/A		
	627	HYDROGEN IGNITER		C 0/02-664				YES	H2		LATER		
1M56 S 0101	HYDROGEN IGNITION SYSTEM		POWER SYSTEMS INC.	CT-5	D	A1	J	LATER	N/A		LATER	T	
	CONTROL OF HYDROGEN IN DRYWELL-CONT.		6043	HARSH							N/A		
	627	HYDROGEN IGNITER		C 0/06-664				YES	H2		LATER		

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-628-00-01
MANUFACTURER'S QUALIFICATION REPORT NO. WCAP-7709-L Supplements 1-7 REV. -
QUALIFICATION METHOD Combination
EQUIPMENT DESCRIPTION Hydrogen Recombiner
MANUFACTURER/MODEL NO. Westinghouse Model A
TESTED DEVICE MODEL NO. Prototype and Production Model A

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-4	104°F	7,731 Hours
AVERAGE	CT-4	87°F	322,115 Hours
MINIMUM	CT-4	62°F	3,221 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
LOSS OF HVAC	CT-4	131/104°F	49 Hours
HOT STANDBY	CT-4	105/104°F	26,400 Hours
SRVD	CT-4	Max. 120°F	1,836 Hours
RADIATION DOSE (RADS, TID)	CT-4	2.71×10^5 Rads (2)	40 Years

ACCELERATED AGING TEMP /TIMES Note 5
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/40 Years
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.0×10^8 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Electrical Power Applied to Heaters while Exposed to Steam/Pressure Environment
FUNCTION TIME (FT)	J (180 Days)	Note 6
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-4	184.6°F	Note 7	Note 7
PRESSURE (PSIG)	CT-4	12.0 PSIG	45.3 PSIG	33.3 PSIG
R.H (%)	CT-4	100%	100%	N/A
SPRAY	CT-4	N/A	N/A	N/A
SUBMERGENCE	CT-4	N/A	N/A	N/A
RADIATION (RADS)	CT-4	$1.8 \times 10^7 \gamma / 1.1 \times 10^8 \beta$	$2.0 \times 10^8 \gamma$ (2)	7.2×10^7

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY J. Smith 3/16/84
CHECKED BY Eddie B. Thomas Jr. 3-17-84
APPROVED BY W. A. Mathews 3/20/84

QUALIFICATION SUMMARY (FILE NO.) SP-628-00-01

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. The normal schedule of the recombiner calls for periodic testing to determine system availability plus periods of non-operating time in normal containment environment. Evaluation of these factors leads to the conclusion that the most significant aging factor was the fatigue life of the structure, due to thermal stresses induced by the periodic heat-up and cool-down tests. It was concluded that the metal structures and metal-enclosed thermal insulation would not be affected by time alone. The heater life for this type of heater element is far in excess of the duty cycles imposed by the periodic tests; however, the duty cycles were included in the aging program since they are a necessary part of the recombiner test.

   The aging test for the recombiner structure consisted of eighty heat-up and cool-down cycles as described in WCAP-7790L, Supplement 2, Section 3.2. Estimating two full temperature tests per year for an installed recombiner leads to a projection of 40 years of qualified life. (Since this test, approximately 30 more thermal cycles have been imposed on the recombiner.)

6. To show the long term capability of the heater banks to operate in the post-DBA containment environment, a long term steam chamber test was undertaken. Two heater banks were subjected to a DBA plus 12 months of simulated post-LOCA environment. The test proved that the individual heater elements and banks plus T/C's, electrical cabling, and T/C junction boxes which are susceptible to steam would perform satisfactorily. These test datas are reported in WCAP-7709L, Supplements 3 and 5.

QUALIFICATION SUMMARY (FILE NO.) SP-628-00-01

SUPPLEMENTAL NOTES (Continued):

7. To show that the heater elements would withstand extremely high temperatures, a group of 12 elements were heated to (1700 to 1750°F) and held for 21 days. No failures occurred.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E628 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP628-00-01

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO	QUALIFICATION M LF/MI	SUMMARY
1H51 P 0094	LOCAL PANELS AND RACKS - NON GE POST-LOCA H-RECOMB CONTROL PANEL A 628 POST-LOCA H-RECOMB CONTROL PANEL A	WESTINGHOUSE MODEL A	CB-2 MILD CCB/01-620	A	A4	J YES	N/A N/A	YES	C 40Y 40Y	SP628-000-01
1H51 P 0095	LOCAL PANELS AND RACKS - NON GE POST-LOCA H-RECOMB CONTROL PANEL B 628 POST-LOCA H-RECOMB CONTROL PANEL B	WESTINGHOUSE MODEL A	CB-2 MILD CCA/01-620	A	A4	J YES	N/A N/A	YES	C 40Y 40Y	SP628-000-01
1M51 D 0001A	COMBUSTIBLE GAS CONTROL SYSTEM POST-LOCA HYDROGEN RECOMBINER A 628 POST LOCA HYDROGEN RECOMBINER A	WESTINGHOUSE MODEL A	CT-4 HARSH C 0/15-664	A	A1	J YES	N/A N/A H2 LATER	YES	C 40Y 40Y	SP628- 00-01
1M51 D 0001B	COMBUSTIBLE GAS CONTROL SYSTEM POST-LOCA HYDROGEN RECOMBINER B 628 POST LOCA HYDROGEN RECOMBINER B	WESTINGHOUSE MODEL A	CT-4 HARSH C 0/13-664	A	A1	J YES	N/A N/A H2 LATER	YES	C 40Y 40Y	SP628- 00-01
1 1M51 S 0001	COMBUSTIBLE GAS CONTROL SYSTEM POST-LOCA H-RECOMB PWR SUPPLY PNL A 628 POWER SUPPLY PANEL A	WESTINGHOUSE MODEL A	CB-2 MILD CCB/02-620	A	A4	J YES	N/A N/A	YES	C 40Y 40Y	SP628-000-01
1M51 S 0002	COMBUSTIBLE GAS CONTROL SYSTEM POST-LOCA H-RECOMB PWR SUPPLY PNL B 628 POWER SUPPLY PANEL B	WESTINGHOUSE MODEL A	CB-2 MILD CCA/01-620	A	A4	J YES	N/A N/A	YES	C 40Y 40Y	SP628-000-01

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SF-632-00-03
MANUFACTURER'S QUALIFICATION REPORT NO. TBI-77TR-1 and TBI-77TR-5 REV. -
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Motor 405TS Frame
MANUFACTURER/MODEL NO. Reliance Type P
TESTED DEVICE MODEL NO. Type P 445TS Frame

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-4	104°F	7,731 Hours
AVERAGE	CT-4	87°F	322,115 Hours
MINIMUM	CT-4	62°F	3,221 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	CT-4	131/104°F	49 Hours
Hot Standby	CT-4	105/104°F	26,400 Hours
SRVD	CT-4	Max. 102°F	1,836 Hours
RADIATION DOSE (RADS, TID)	CT-4	2.71×10^5 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 200°C/265 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/40 Years
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 1.1×10^8 Rads γ (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Motor Operated during Environmental Transient
FUNCTION TIME (FT)	J (180 Days)	See Note 5
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-4	184.6°F	192°F	7.4°F
PRESSURE (PSIG)	CT-4	12.0 PSIG	14.9 PSIG	2.9 PSIG
R.H. (%)	CT-4	100%	100%	N/A
SPRAY	CT-4	N/A	N/A	N/A
SUBMERGENCE	CT-4	N/A	N/A	N/A
RADIATION (RADS)	CT-4	1.8×10^7 γ/5.5×10^7 β	1.1×10^8 γ (2)	3.7×10^7

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY J. Smith 3/16/84
CHECKED BY Eddie B. Thomas 3-16-84
APPROVED BY R. A. Gallery 3/20/84

QUALIFICATION SUMMARY (FILE NO.) SP-632-00-03

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. The motor was subjected to a 60-day environmental type test with ambient temperature reaching a maximum of 192°F in the initial stages, from day 2 through day 53 the ambient temperature was set at 140°F and day 54 through 60 had an ambient temperature of 130°F.

   The accident temperature at Perry reaches a maximum of 184.6°F, declines to 120°F at 10 days, and 90°F at 100 days and beyond.

   Under these circumstances, the subject motors are conservatively qualified for the post-accident environment.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP632-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP632-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1M51 C 0001A	COMBUSTIBLE GAS CONTROL SYSTEM HYDROGEN MIXING 632	MOTOR	RELIANCE TYPE P	CT-4 HARSH C 0/15-664	A	A1	J	YES	N/A H2	N/A LATER	YES	T	40Y 40Y	SP632-000-03
1M51 C 0001B	COMBUSTIBLE GAS CONTROL SYSTEM HYDROGEN MIXING 632	MOTOR	RELIANCE TYPE P	CT-4 HARSH C 0/13-664	A	A1	J	YES	N/A H2	N/A LATER	YES	T	40Y 40Y	SP632-000-03

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-641-000-04
MANUFACTURER'S QUALIFICATION REPORT NO. AQR-67368 REV. 0
QUALIFICATION METHOD Type Test
EQUIPMENT DESCRIPTION Solenoid
MANUFACTURER/MODEL NO. ASCO/NP8316A75E
TESTED DEVICE MODEL NO. NP831655E

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	DW-1	135°F	8,401 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	CT-0	55°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
SCRAM	DW-1	141°F	300 Hours
RADIATION DOSE (RADS, TID)	DW-1	2.8×10^7 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 250°F/18½ Days for Valves & 36½ Days for Coils
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/8 Years
LIFE-LIMITING COMPONENT Elastomeric Seals & Coils
TEST RADIATION DOSE (TID) 2.05×10^8 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	See Note 5 A1 (CT-0,1,& 7)	Equip. Passed Functional Testing After Each Aging Test
FUNCTION TIME (FT)	A (0-to-45 Secs)	Equip. Passed Functional Testing After Each Aging Test
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	See Note 6 4.0 Seconds	Vendor Assembly and Test Records Show < 4.0 Seconds to Close Valve Assembly

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-1	185°F	450°F	265°F
PRESSURE (PSIG)	CT-1	12.0 PSIG	80 PSIG	68 PSIG
R.H. (%)	CT-1	100%	Steam	N/A
SPRAY	CT-1 & 7	Demineralized Water	Clear Water & Chem. Spray	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	CT-1	1.52×10^8 Rads	1.77×10^8 Rads (2)	> 10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY T. Rockwell / 3/16/84
CHECKED BY Eddie B. Thomas Jr. 3-19-84
APPROVED BY [illegible] 3/20/84

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN A HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-641-000-04

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Solenoids in Zone DW-1 are equipment category A3, and therefore, DW-1 will not be used for the limiting zone during an accident.

6. Response time is for valve assembly, not solenoid valve by itself.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP641-000-04 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP641-000-04

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD	EC CAT ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1M14 F 0043	CONTAINMENT VESSEL AND DRYWELL PURGE OP AIR TO F040 641 SOLENOID	ASCO NP8316A75E	CT-0 HARSH C 0/12-689	A	A1	A	YES	N/A 15.0	SEC	YES	C	40Y 08Y	SP641-000-04
1M14 F 0048	CONTAINMENT VESSEL AND DRYWELL PURGE OP AIR TO F045 641 SOLENOID	ASCO NP8316A75E	CT-1 HARSH C 0/12-689	A	A3	A	YES	N/A 15.0	SEC	YES	C	40Y 08Y	SP641-000-04
1M14 F 0058A	CONTAINMENT VESSEL AND DRYWELL PURGE OP AIR TO F055A 641 SOLENOID	ASCO NP8316A75E	DW-1 HARSH C I/07-630	A	A3	A	YES	N/A 15.0	SEC	YES	C	40Y 08Y	SP641-000-04
1M14 F 0058B	CONTAINMENT VESSEL AND DRYWELL PURGE OP AIR TO F055B 641 SOLENOID	ASCO NP8316A75E	CT-3 HARSH C 0/07-630	A	A3	A	YES	N/A 15.0	SEC	YES	C	40Y 08Y	SP641-000-04
1M14 F 0063A	CONTAINMENT VESSEL AND DRYWELL PURGE OP AIR TO F060A 641 SOLENOID	ASCO NP8316A75E	DW-1 HARSH C I/16-630	A	A3	A	YES	N/A 15.0	SEC	YES	C	40Y 08Y	SP641-000-04
1M14 F 0063B	CONTAINMENT VESSEL AND DRYWELL PURGE OP AIR TO F060B 641 SOLENOID	ASCO NP8316A75E	CT-3 HARSH C 0/16-630	A	A3	A	YES	N/A 15.0	SEC	YES	C	40Y 08Y	SP641-000-04
1M14 F 0068	CONTAINMENT VESSEL AND DRYWELL PURGE OP AIR TO F065 641 SOLENOID	ASCO NP8316A75E	CT-7 HARSH C 0/12-652	A	A3	A	YES	N/A 15.0	SEC	YES	C	40Y 08Y	SP641-000-04
1M14 F 0073	CONTAINMENT VESSEL AND DRYWELL PURGE OP AIR TO F070 641 SOLENOID	ASCO NP8316A75E	CT-7 HARSH C 0/12-652	A	A3	A	YES	N/A 15.0	SEC	YES	C	40Y 08Y	SP641-000-04
1M14 F 0088	CONTAINMENT VESSEL AND DRYWELL PURGE OP AIR TO F085 641 SOLENOID	ASCO NP8316A75E	CT-7 HARSH C 0/12-664	A	A3	A	YES	N/A 15.0	SEC	YES	C	40Y 08Y	SP641-000-04
1M14 F 0093	CONTAINMENT VESSEL AND DRYWELL PURGE OP AIR TO F090 641 SOLENOID	ASCO NP8316A75E	CT-0 HARSH C 0/12-664	A	A1	A	YES	N/A 15.0	SEC	YES	C	40Y 08Y	SP641-000-04
1M14 F 0192	CONTAINMENT VESSEL AND DRYWELL PURGE OP AIR TO F190 641 SOLENOID	ASCO NP8316A75E	CT-1 HARSH C 0/12-689	A	A1	A	YES	N/A 15.0	SEC	YES	C	40Y 08Y	SP641-000-04

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP641-000-04 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP641-000-04

EQUIPMENT NUMBER	SERVICE DESCRIPTION / SP NO 1 GE PURCH DWG	MANUFACTURER / MODEL / EQUIP. DESCRIPTION	ZONE / LOCATION	QUALD CAT	EC ELEV	FT OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1M14 F 0202	CONTAINMENT VESSEL AND DRYWELL PURGE OP AIR TO F200 641 SOLENOID	ASCO NP8316A75E	CT-7 HARSH C 0/12-664	A	A1	A YES	N/A	15.0 SEC	YES	C 40Y 08Y	SP641-000-04

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-642-000
MANUFACTURER'S QUALIFICATION REPORT NO. _____ REV. _____
QUALIFICATION METHOD Type Test
EQUIPMENT DESCRIPTION Heating Coil & Panel
MANUFACTURER/MODEL NO. CVI Penwalt Corp/per CVI Drawings #B435-6011 and B435-6014
TESTED DEVICE MODEL NO. Per CVI Drawings #B435-6011 and B435-6014

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON. ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-7	138 F	8,408 Hours
AVERAGE	FB-7	111 F	338,440 Hours
MINIMUM	FB-7	96 F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	FB-7	163/138 F	49 Hours
RADIATION DOSE (RADS, TID) T.I.D	FB-8	8.8×10^3 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 212°F/2,750 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/5 Years
LIFE-LIMITING COMPONENT All Fuses
TEST RADIATION DOSE (TID) 1.65×10^6 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED (5)
EQUIPMENT CATEGORY (EC)	A1	Past Functional Test after Environmental Test
FUNCTION TIME (FT)	J (180 Days)	Past Functional Test after Environmental Test
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED (5)	
	LIMITING ENVIRON. ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	FB-7	139°F	212°F	> 10%
PRESSURE (PSIG)	FB-7, 8	Atmospheric	Atmospheric	N/A
R.H. (%)	FB-7, 8	90%	90%	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS) (TID)	FB-8	1.52×10^6 Rads	1.64×10^6 (2)	7.9%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV. NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY T. N. Rockwell /
CHECKED BY Eddie B. Thomas Jr. 12-21-84
APPROVED BY R. A. Mathews 12/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-642-000

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. These values are based on test procedures. They will be reviewed and altered, if required, based on final report values. Expected completion date is March 30, 1984.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 09E642
SELECT :
SORT : 01
TITLE : EQRL SP642-00

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	ACC/RT TME DEMO DEMO	QUALIFICATION M LF/MI	SUMMARY
OM26 D 0001A	CONTROL ROOM EMERG RECIRCULATION SYS CRER ELECTRIC HEATING COIL 642 CRER ELECTRIC	CVI PENWALT CORP N/A HEATING COIL	CB-3 MILD CCD/03-679	C	A4	J		N/A N/A		C	
OM26 D 0001B	CONTROL ROOM EMERG RECIRCULATION SYS CRER ELECTRIC HEATING COIL 642 CRER ELECTRIC	CVI PENWALT CORP N/A HEATING COIL	CB-3 MILD CCB/03-679	C	A4	J		N/A N/A		C	
OM40 D 0001A	FUEL HANDLING BUILDING VENT SYSTEM 50KW HEATER - EXHAUST PLENUM 642 HEATING COIL	CVI PENWALT CORP N/A	FB-8 HARSH IBG/06-682	C	A1	J		N/A N/A		C	
OM40 D 0001B	FUEL HANDLING BUILDING VENT SYSTEM 50KW HEATER - EXHAUST PLENUM 642 HEATING COIL	CVI PENWALT CORP N/A	FB-8 HARSH IBH/06-682	C	A1	J		N/A N/A		C	
OM40 D 0001C	FUEL HANDLING BUILDING VENT SYSTEM 50KW HEATER - EXHAUST PLENUM 642 HEATING COIL	CVI PENWALT CORP N/A	FB-8 HARSH IBI/06-682	C	A1	J		N/A N/A		C	
1M15 D 0001A	ANNULUS EXHAUST GAS TREATMENT SYSTEM PLENUM 642 AEGT HEATING COIL	CVI PENWALT CORP N/A A	FB-7 HARSH IBG/06-620	C	A1	J		N/A N/A		C	
1M15 D 0001B	ANNULUS EXHAUST GAS TREATMENT SYSTEM PLENUM 642 AEGT HEATING COIL	CVI PENWALT CORP N/A B	FB-7 HARSH IBG/06-620	C	A1	J		N/A N/A		C	

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-645-000-07
MANUFACTURER'S QUALIFICATION REPORT NO. NUC-9 & Supplement REV. 0/1
QUALIFICATION METHOD Type Test
EQUIPMENT DESCRIPTION Motor
MANUFACTURER/MODEL NO. Reliance/324T, 254T, 405TX, 405T, 405TS, 326TS, and 215T
TESTED DEVICE MODEL NO. Random Wound Motor with Class H Type RH & RN Insulation

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-7	138°F	8,408 Hours
AVERAGE	FB-3	119°F	333,440 Hours
MINIMUM	FB-8	60°F	2,956 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	FB-7	163°F	49 Hours
RADIATION DOSE (RADS, TID)	FB-8	8.8×10^3 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 500, 536, 572, & 608°F/Motorette Thermal Life Analysis per IEEE-101-1972
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/No Replacement Maintenance Required
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.04×10^8 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1 (FB-3,7, & 8)	Passed Motorette Voltage Checks after Aging Per IEEE-117-1974
FUNCTION TIME (FT)	J (180 Days)	Passed Motorette Voltage Checks after Aging per IEEE-117-1974
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	FB-3	150°F	202°F	52°F
PRESSURE (PSIG)	FB-7	Atmospheric	Atmospheric	-
R.H. (%)	FB-7	90%	100%	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS) (TID)	FB-8	1.52×10^6 Rads	2.03×10^8 Rads (2)	>10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV. NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY T. Rockwell 3/16/84
CHECKED BY Eddie B. Alonzo Jr. 3-19-84
APPROVED BY [illegible] 3/20/84

QUALIFICATION SUMMARY (FILE NO.) SP-645-000-07

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

SAFET RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP645-000-07
SELECT :
SORT : 01
TITLE : EQRL SP645-000-07

AS OF 00636 03/22/84

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP. DESCRIPTION	MANUFACTURER MODEL	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
OM23 C 0001A	MCC,SWGR & MISC ELEC AREAS HVAC SYS		RELIANCE ELECTRIC	CB-3	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	SUPPLY FAN MOTOR		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		CCD/03-679										
OM23 C 0001B	MCC,SWGR & MISC ELEC AREAS HVAC SYS		RELIANCE ELECTRIC	CB-3	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	SUPPLY FAN MOTOR		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		CCA/03-679										
OM23 C 0002A	MCC,SWGR & MISC ELEC AREAS HVAC SYS		RELIANCE ELECTRIC	CB-3	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	RETURN FAN MOTOR		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		CCD/03-679										
OM23 C 0002B	MCC,SWGR & MISC ELEC AREAS HVAC SYS		RELIANCE ELECTRIC	CB-3	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	RETURN FAN MOTOR		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		CCA/03-679										
OM24 C 0001A	BATTERY ROOM EXHAUST SYSTEM		RELIANCE ELECTRIC	CB-3	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	EXHAUST FAN MOTOR		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		CCD/05-679										
OM24 C 0001B	BATTERY ROOM EXHAUST SYSTEM		RELIANCE ELECTRIC	CB-3	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	EXHAUST FAN MOTOR		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		CCA/05-679										
OM25 C 0001A	CONTROL ROOM HVAC SYSTEM		RELIANCE ELECTRIC	CB-3	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	SUPPLY FAN MOTOR		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		CCC/04-679										
OM25 C 0001B	CONTROL ROOM HVAC SYSTEM		RELIANCE ELECTRIC	CB-3	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	SUPPLY FAN MOTOR		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		CCB/04-679										
OM25 C 0002A	CONTROL ROOM HVAC SYSTEM		RELIANCE ELECTRIC	CB-3	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	RETURN FAN MOTOR		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		CCC/04-679										
OM25 C 0002B	CONTROL ROOM HVAC SYSTEM		RELIANCE ELECTRIC	CB-3	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	RETURN FAN MOTOR		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		CCB/04-679										
OM26 C 0001A	EMERGENCY RECIRCULATION SYSTEM		RELIANCE ELECTRIC	CB-3	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	RECIRCULATION FAN MOTOR		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		CCC/03-679										

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP645-000-07 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP645-000-07

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	EQUIP.	MANUFACTURER MODEL DESCRIPTION	ZONE LOCATION	QUALD	EC CAT ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
OM26 C 0001B	EMERGENCY RECIRCULATION SYSTEM		RELIANCE ELECTRIC	CB-3	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	RECIRCULATION FAN MOTOR		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		CCB/03-679										
OM40 C 0001A	FUEL HANDLING BUILDING VENT SYSTEM		RELIANCE ELECTRIC	FB-3	A	A1	J	YES	N/A		YES	C	40Y	SP645-000-07
	SUPPLY FAN MOTOR		AC POLYPHASE	HARSH					N/A				40Y	
	645	MOTOR		IBK/09-599										
OM40 C 0001B	FUEL HANDLING BUILDING VENT SYSTEM		RELIANCE ELECTRIC	FB-3	A	A1	J	YES	N/A		YES	C	40Y	SP645-000-07
	SUPPLY FAN MOTOR		AC POLYPHASE	HARSH					N/A				40Y	
	645	MOTOR		IBK/09-599										
OM40 C 0002A	FUEL HANDLING BUILDING VENT SYSTEM		RELIANCE ELECTRIC	FB-8	A	A1	J	YES	N/A		YES	C	40Y	SP645-000-07
	EXHAUST FAN MOTOR		AC POLYPHASE	HARSH					N/A				40Y	
	645	MOTOR		IBG/06-682										
OM40 C 0002B	FUEL HANDLING BUILDING VENT SYSTEM		RELIANCE ELECTRIC	FB-8	A	A1	J	YES	N/A		YES	C	40Y	SP645-000-07
	EXHAUST FAN MOTOR		AC POLYPHASE	HARSH					N/A				40Y	
	645	MOTOR		IBH/06-682										
OM40 C 0002C	FUEL HANDLING BUILDING VENT SYSTEM		RELIANCE ELECTRIC	FB-8	A	A1	J	YES	N/A		YES	C	40Y	SP645-000-07
	EXHAUST FAN MOTOR		AC POLYPHASE	HARSH					N/A				40Y	
	645	MOTOR		IBI/06-682										
1M15 C 0001A	ANNULUS EXHAUST GAS TREATMENT SYSTEM		RELIANCE ELECTRIC	FB-7	A	A1	J	YES	N/A		YES	C	40Y	SP645-000-07
	FAN		AC POLYPHASE	HARSH					N/A				40Y	
	645	MOTOR		IBG/06-620										
1M15 C 0001B	ANNULUS EXHAUST GAS TREATMENT SYSTEM		RELIANCE ELECTRIC	FB-7	A	A1	J	YES	N/A		YES	C	40Y	SP645-000-07
	FAN		AC POLYPHASE	HARSH					N/A				40Y	
	645	MOTOR		IBG/06-620										
1M36 C 0001A	OFF GAS BUILDING EXHAUST SYSTEM		RELIANCE ELECTRIC	OG-B	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	OFF GAS EXHAUST FAN		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		OGA/02-635										
1M36 C 0001B	OFF GAS BUILDING EXHAUST SYSTEM		RELIANCE ELECTRIC	OG-B	A	A4	J	YES	N/A		YES	C	40Y	SP645-000-07
	OFF GAS EXHAUST FAN		AC POLYPHASE	MILD					N/A				40Y	
	645	MOTOR		OGC/02-635										

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-646-000-03
MANUFACTURER'S QUALIFICATION REPORT NO. NUC-9 & Supplement REV. 0/1
QUALIFICATION METHOD Type Test
EQUIPMENT DESCRIPTION Motor
MANUFACTURER/MODEL NO. Reliance/256T & 184T
TESTED DEVICE MODEL NO. Random Wound Motor with Class H Type RH & RN Insulation

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	AB-4	147°F	1,499 Hours
AVERAGE	AB-3	102°F	338,440 Hours
MINIMUM	AB-3	66°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-2	154°F	49 Hours
RADIATION DOSE (RADS, TID)	AB-2	6.2×10^5 Rads (2)	40 Years

ACCELERATED AGING TEMP./TIMES 500, 536, 572, & 608°F/Motorette Thermal Life Analysis Per IEEE-101-1972.
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/No Replacement Maintenance Record
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.04×10^8 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1 (AB-2,3, & 4)	Passed Motorette Voltage Checks after Aging per IEEE-117-74
FUNCTION TIME (FT)	J (180 Days)	Passed Motorette Voltage Checks after Aging Per IEEE-117-74
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-4	160°F	202°F	42°F
PRESSURE (PSIG)	AB-3	3.0 PSIG	Atmospheric (Note 5)	-
R.H. (%)	AB-3 & 4	100%	100%	N/A
SPRAY	N/A	N/A	N/A	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS) (TID)	AB-4	4.1×10^7 Rads	2.03×10^8 Rads (2)	>10%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY T. Rockwell / 3/16/84
CHECKED BY Eddie B. Thomas Jr / 3-19-84
APPROVED BY M.A. Mathews / 3/20/84

QUALIFICATION SUMMARY (FILE NO.) SP-646-000-03

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Motor components are not affected by pressure transients of this magnitude.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 28ESP646-000-03 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP646-000-03

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES TME H2/H2	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
OM28 B 0001A	EMER CLOSED COOL PMP AREA COOL SYS AIR HANDLING UNIT FAN MOTOR A 646 MOTOR	RELIANCE ELECTRIC P25G369	CB-5 MILD CCD/04-587	A	A4	J	YES	N/A N/A	YES	C	40Y 40Y	SP646-000-03
OM28 B 0001B	EMER CLOSED COOL PMP AREA COOL SYS AIR HANDLING UNIT FAN MOTOR B 646 MOTOR	RELIANCE ELECTRIC P25G369	CB-5 MILD CCD/05-587	A	A4	J	YES	N/A N/A	YES	C	40Y 40Y	SP646-000-03
1 1M39 B 0001A	ECCS PUMP ROOM COOLING SYSTEM RHR A AIR HANDLING UNIT MOTOR 646 MOTOR	RELIANCE ELECTRIC P25G369	AB-4 HARSH AXC/07-574	A	A1	J	YES	N/A N/A	YES	C	40Y 40Y	SP646-000-03
1 1M39 B 0001B	ECCS PUMP ROOM COOLING SYSTEM RHR B AIR HANDLING UNIT MOTOR 646 MOTOR	RELIANCE ELECTRIC P25G369	AB-4 HARSH AXC/04-574	A	A1	J	YES	N/A N/A	YES	C	40Y 40Y	SP646-000-03
1 1M39 B 0002	ECCS PUMP ROOM COOLING SYSTEM RHR C AIR HANDLING UNIT MOTOR 646 MOTOR	RELIANCE ELECTRIC P25G369	AB-4 HARSH AXB/05-574	A	A1	J	YES	N/A N/A	YES	C	40Y 40Y	SP646-000-03
1 1M39 B 0003	ECCS PUMP ROOM COOLING SYSTEM HPCS PUMP RM AIR HANDLING UNIT MOTOR 646 MOTOR	RELIANCE ELECTRIC P25G369	AB-2 HARSH AXC/03-574	A	A1	J	YES	N/A N/A	YES	C	40Y 40Y	SP646-000-03
1 1M39 B 0004	ECCS PUMP ROOM COOLING SYSTEM RCIC PUMP RM AIR HANDLING UNIT MOTOR 646 MOTOR	RELIANCE ELECTRIC P18G341	AB-3 HARSH AXB/06-574	A	A1	J	YES	N/A N/A	YES	C	40Y 40Y	SP646-000-03
1 1M39 B 0006	ECCS PUMP ROOM COOLING SYSTEM LPCS PUMP RM AIR HANDLING UNIT MOTOR 646 MOTOR	RELIANCE ELECTRIC P25G369	AB-2 HARSH AXC/08-574	A	A1	J	YES	N/A N/A	YES	C	40Y 40Y	SP646-000-03

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-793-01-2
MANUFACTURER'S QUALIFICATION REPORT NO. QR-2806 REV. 1
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Coaxial Cable
MANUFACTURER/MODEL NO. Rockbestos/Firewall III Coaxial Cable
TESTED DEVICE MODEL NO. Firewall III Coaxial Cable RSS-6-104

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,410 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-4	133°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
SCRAM	DW-1	Max. 141°F	300 Hours
SHUTDOWN	AB-2	Max. 140°F	54,774 Hours
LOSS OF HVAC	AB-5	Max. 258°F	49 Hours
RADIATION DOSE (RADS, TID)	DW-2	4.5×10^7 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 120°C/700 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 20.6×10^7 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized, 600 VAC, 60 Hz.
FUNCTION TIME (FT)	(J) 180 Days	30-Days LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	346°F	16°F
PRESSURE (PSIG)	DW-1	22.1 PSIG	113 PSIG	90.9 PSIG
R.H. (%)	DW-1	Steam	Steam	N/A
SPRAY	DW-1	Demineralized Water	Borated Water	N/A
SUBMERGENCE	DW-1	5 Seconds	5 Minutes	N/A
RADIATION (RADS)	DW-1	21.6×10^7 Rads	24.5×10^7 Rads (2)	2.9×10^7 Rads 13%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig / 3/16/84
CHECKED BY Eddie B. Thomas / 3-17-84
APPROVED BY [illegible] / 3/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-793-01-02

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Beta radiation is not included due to reduction allowed for shielding provided by conduit enclosures or group of cable in tray.

6. Neutron radiation is not included due to the gamma radiation equivalent being insignificant in comparison to the gamma TID.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-793-01-3
MANUFACTURER'S QUALIFICATION REPORT NO. QR-1802, QR-1806R2 REV. 2/5
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Instrumentation Cable
MANUFACTURER/MODEL NO. Rockbestos/Firewall III Instrumentation Cable
TESTED DEVICE MODEL NO. Firewall III Instrumentation Cable

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	FB-5	147°F	8,410 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-4	133°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
SCRAM	DW-1	Max. 141°F	300 Hours
SHUTDOWN	AB-2	Max. 140°F	54,774 Hours
LOSS OF HVAC	AB-5	Max. 258°F	49 Hours
RADIATION DOSE (RADS, TID)	DW-2	4.5×10^7 Rads(2)	40 Years

ACCELERATED AGING TEMP./TIMES 150°C/1300 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 20.1×10^7 Rads (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized, 600 VAC
FUNCTION TIME (FT)	(J) 180 Days	30-Day LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	346°F	16°F
PRESSURE (PSIG)	DW-1	22.1 PSIG	113 PSIG	90.9 PSIG
R.H. (%)	DW-1	Steam	Steam	N/A
SPRAY	DW-1	Demineralized Water	Borated Water	N/A
SUBMERGENCE	DW-1	5 Seconds	5 Minutes	N/A
RADIATION (RADS)	DW-1	21.6×10^7 Rads	24.5×10^7 Rads (2)	2.9×10^7 Rads 13%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig 3/16/84
CHECKED BY Eddie B. Hunnicutt Jr. 3-17-84
APPROVED BY H. A. Mathews 3/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-793-01-3

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Beta radiation is not included due to reduction allowed for shielding provided by conduit enclosures or group of cable in tray.

6. Neutron radiation is not included due to the gamma radiation equivalent being insignificant in comparison to the gamma TID.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-793-05
MANUFACTURER'S QUALIFICATION REPORT NO. Test Plan QTP-210 REV. 2
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Limit Switch
MANUFACTURER/MODEL NO. National ACME (NAMCO)/EA 740, EA 170, EA 180
TESTED DEVICE MODEL NO. EA 740, EA 170, EA 180

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	DW-1	135°F	8,401 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	CT-0	55°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F): Loss of HVAC	AB-7	189°F	49 Hours
RADIATION DOSE (RADS, TID)	DW-1	2.8×10^7 (6) (2)	40 Years

ACCELERATED AGING TEMP./TIMES 120°C/500 or 1000 Hours (7)
QUALIFIED LIFE/MAINTENANCE INTERVAL (Test Plan)
LIFE-LIMITING COMPONENT 5-10 Years
TEST RADIATION DOSE (TID) 3.58×10^8 Rads TID (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED (7)
EQUIPMENT CATEGORY (EC)	A1	
FUNCTION TIME (FT)	J (180 Days)	35 Days Extended by Analysis to 180 Days
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE (7)	MARGIN
TEMPERATURE (°F)	DW-1	330°F	345°F	15
PRESSURE (PSIG)	DW-1	22.1	60	37.1
R.H. (%)	DW-1	100	100	N/A
SPRAY	DW-1	30 Hours	48 Hours	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	DW-1	2.7×10^8 (5)	2.99×10^8 (5) (2)	$.29 \times 10^8$

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV. NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY Claude Gosch / 2-2-84
CHECKED BY Eddie B. Thomas Jr. / 2-16-84
APPROVED BY [illegible] / 3/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-793-05

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. The required Beta radiation value is $2.9 \times 10^8 \beta$. The vendor will account for β dosages by establishing its gamma equivalent and adding to the Gamma TID using a 200 to 1 ratio $\cong 2 \times 10^6$ rads γ.

6. The required neutron fluence is $1.0 \times 10^{15} \mu$ Tn/CM^2 (40-year TID). Vendor will show by experience and/or analysis justification of how demonstrated neutron fluence is established.

7. All demonstrated values are from vendor's test plan testing of limit switches expected to be completed July 1, 1984.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 09E79305
SELECT :
SORT : 01
TITLE : EQRL SP793-005

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES TME H2/H2	ACC/RT DEMO	M	LF/MI	QUALIFICATION SUMMARY
OM23 N 0011A	MCC,SWGR,& MISC. ELECT. EQUIP. AREA	NATIONAL ACME	CB-3	A	A4	J	YES	N/A	YES	C	40Y	SP049-000-12
	LIMIT SWITCH FOR DAMPER OM23F010A	EA74080100	MILD					N/A			40Y	
	79305 LIMIT SWITCH		CCE/02-679									
OM23 N 0011B	MCC,SWGR,&MISC. ELECT. EQUIP.AREA	NATIONAL ACME	CB-3	A	A4	J	YES	N/A	YES	C	40Y	SP049-000-12
	LIMIT SWITCH FOR DAMPER OM23F010B	EA74080100	MILD					N/A			40Y	
	79305 LIMIT SWITCH		CCA/02-679									
OM24 N 0013A	BATTERY ROOM EXHAUST	NATIONAL ACME	CB-3	A	A4	J	YES	N/A	YES	C	40Y	SP049-000-12
	LIMIT SWITCH FOR DAMPER OM24F011A	EA74080100	MILD					N/A			40Y	
	79305 LIMIT SWITCH		CCD/03-679									
OM24 N 0013B	BATTERY ROOM EXHAUST	NATIONAL ACME	CB-3	A	A4	J	YES	N/A	YES	C	40Y	SP049-000-12
	LIMIT SWITCH FOR DAMPER OM24F011B	EA74080100	MILD					N/A			40Y	
	79305 LIMIT SWITCH		CCB/03-679									
OM24 N 0066A	BATTERY ROOM EXHAUST	NATIONAL ACME	CB-3	A	A4	J	YES	N/A	YES	C	40Y	SP049-000-12
	LIMIT SWITCH FOR DAMPER OM24F065A	EA74080100	MILD					N/A			40Y	
	79305 LIMIT SWITCH		CCD/03-679									
OM24 N 0066B	BATTERY ROOM EXHAUST	NATIONAL ACME	CB-3	A	A4	J	YES	N/A	YES	C	40Y	SP049-000-12
	LIMIT SWITCH FOR DAMPER OM24F065B	EA74080100	MILD					N/A			40Y	
	79305 LIMIT SWITCH		CCB/03-679									
OM24 N 0111A	BATTERY ROOM EXHAUST	NATIONAL ACME	CB-3	A	A4	J	YES	N/A	YES	C	40Y	SP049-000-12
	LIMIT SWITCH FOR DAMPER OM24F051A	EA74080100	MILD					N/A			40Y	
	79305 LIMIT SWITCH		CCC/04-679									
OM24 N 0111B	BATTERY ROOM EXHAUST	NATIONAL ACME	CB-3	A	A4	J	YES	N/A	YES	C	40Y	SP049-000-12
	LIMIT SWITCH FOR DAMPER OM24F051B	EA74080100	MILD					N/A			40Y	
	79305 LIMIT SWITCH		CCC/04-679									
OM25 N 0011A	CONTROL ROOM HVAC	NATIONAL ACME	CB-3	A	A4	J	YES	N/A	YES	C	40Y	SP049-000-08
	LIMIT SWITCH FOR DAMPER OM25F010A	EA17031302/32302	MILD					N/A			40Y	
	79305 LIMIT SWITCH		CCD/03-679									
OM25 N 0011B	CONTROL ROOM HVAC	NATIONAL ACME	CB-3	A	A4	J	YES	N/A	YES	C	40Y	SP049-000-08
	LIMIT SWITCH FOR DAMPER OM25F010B	EA17031302/32302	MILD					N/A			40Y	
	79305 LIMIT SWITCH		CCB/03-679									
OM25 N 0021A	CONTROL ROOM HVAC	NATIONAL ACME	CB-3	A	A4	J	YES	N/A	YES	C	40Y	SP049-000-08
	LIMIT SWITCH FOR DAMPER OM25F020A	EA17031302/32302	MILD					N/A			40Y	
	79305 LIMIT SWITCH		CCB/03-679									

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E79305 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP793-005

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
OM25 N 0021B	CONTROL ROOM HVAC LIMIT SWITCH FOR DAMPER OM25F020B 79305 LIMIT SWITCH	NATIONAL ACME EA17031302/32302	CB-3 MILD CCD/03-679	A	A4	J	YES	N/A N/A		YES	C 40Y 40Y	SP049-000-08
OM25 N 0111A	CONTROL ROOM HVAC LIMIT SWITCH FOR DAMPER OM25F110A 79305 LIMIT SWITCH	NATIONAL ACME EA74080100	CB-3 MILD CCC/03-679	A	A4	J	YES	N/A N/A		YES	C 40Y 40Y	SP049-000-12
OM25 N 0111B	CONTROL ROOM HVAC LIMIT SWITCH FOR DAMPER OM25F110B 79305 LIMIT SWITCH	NATIONAL ACME EA74080100	CB-3 MILD CCC/03-679	A	A4	J	YES	N/A N/A		YES	C 40Y 40Y	SP049-000-12
OM25 N 0131A	CONTROL ROOM HVAC LIMIT SWITCH FOR DAMPER OM25F130A 79305 LIMIT SWITCH	NATIONAL ACME EA17031302/32302	CB-3 MILD CCC/03-679	A	A4	J	YES	N/A N/A		YES	C 40Y 40Y	SP049-000-08
OM25 N 0131B	CONTROL ROOM HVAC LIMIT SWITCH FOR DAMPER OM25F130B 79305 LIMIT SWITCH	NATIONAL ACME EA17031302/32302	CB-3 MILD CCC/03-679	A	A4	J	YES	N/A N/A		YES	C 40Y 40Y	SP049-000-08
OM25 N 0251A	CONTROL ROOM HVAC SYSTEM DAMPER POSITION SWITCH 79305 LIMIT SWITCH	NATIONAL ACME EA74080100	CB-3 MILD CCD/01-679	A	A4	J	YES	N/A N/A		YES	C 40Y 40Y	SP049-000-12
OM25 N 0251B	CONTROL ROOM HVAC SYSTEM DAMPER POSITION SWITCH 79305 LIMIT SWITCH	NATIONAL ACME EA74080100	CB-3 MILD CCC/01-679	A	A4	J	YES	N/A N/A		YES	C 40Y 40Y	SP049-000-12
OM25 N 0256A	CONTROL ROOM HVAC SYSTEM DAMPER POSITION SWITCH 79305 LIMIT SWITCH	NATIONAL ACME EA74080100	CB-1 MILD CCE/01-654	A	A4	J	YES	N/A N/A		YES	C 40Y 40Y	SP049-000-12
OM25 N 0256B	CONTROL ROOM HVAC SYSTEM DAMPER POSITION SWITCH 79305 LIMIT SWITCH	NATIONAL ACME EA74080100	CB-1 MILD CCB/01-654	A	A4	J	YES	N/A N/A		YES	C 40Y 40Y	SP049-000-12
OM25 N 0265A	CONTROL ROOM HVAC LIMIT SWITCH FOR DAMPER OM25F263A 79305 LIMIT SWITCH	NATIONAL ACME EA74080100	CB-1 MILD CCE/01-654	A	A4	J	YES	N/A N/A		YES	C 40Y 40Y	SP049-000-12
OM25 N 0265B	CONTROL ROOM HVAC LIMIT SWITCH FOR DAMPER OM25F263B 79305 LIMIT SWITCH	NATIONAL ACME EA74080100	CB-1 MILD CCB/01-654	A	A4	J	YES	N/A N/A		YES	C 40Y 40Y	SP049-000-12

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

AS OF 00636 03/22/84

SELECT : 09E79305
SELECT :
SORT : 01
TITLE : EQRL SP793-005

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT ELEV	EC	FT	OPER DEMO SEAL	ACC RES TME H2/H2	ACC/RT DEMO DEMO	M	QUALIFICATION LF/MI	SUMMARY
OM26 N 0041A	CONTROL ROOM EMERGENCY RECIRC LIMIT SWITCH FOR DAMPER OM26F040A 79305 LIMIT SWITCH	NATIONAL ACME EA74080100	CB-3 MILD CCD/03-679	A A4	J		YES	N/A N/A	YES	C	40Y 40Y	SP049-000-12
OM26 N 0041B	CONTROL ROOM EMERGENCY RECIRC LIMIT SWITCH FOR DAMPER OM26F040B 79305 LIMIT SWITCH	NATIONAL ACME EA74080100	CB-3 MILD CCB/03-679	A A4	J		YES	N/A N/A	YES	C	40Y 40Y	SP049-000-12
1 1B21 F 0022A	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM MAIN STEAM ISOLATION VALVE-INBOARD 79305 LIMIT SWITCHES(6)	NATIONAL ACME EA74050100	DW-1 HARSH C I/01-620	C A1	I		LATER YES	N/A N/A H2	LATER	T		SP301-S05-00
1 1B21 F 0022B	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM MAIN STEAM ISOLATION VALVE-INBOARD 79305 LIMIT SWITCHES(6)	NATIONAL ACME EA74050100	DW-1 HARSH C I/17-620	C A1	I		LATER YES	N/A N/A H2	LATER	T		SP301-S05-00
1 1B21 F 0022C	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM MAIN STEAM ISOLATION VALVE-INBOARD 79305 LIMIT SWITCHES(6)	NATIONAL ACME EA74050100	DW-1 HARSH C I/01-620	C A1	I		LATER YES	N/A N/A H2	LATER	T		SP301-S05-00
1 1B21 F 0022D	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM MAIN STEAM ISOLATION VALVE-INBOARD 79305 LIMIT SWITCHES(6)	NATIONAL ACME EA74050100	DW-1 HARSH C I/17-620	C A1	I		LATER YES	N/A N/A H2	LATER	T		SP301-S05-00
1 1B21 F 0028A	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM MAIN STEAM ISOLATION VALVE-OUTBOARD 79305 LIMIT SWITCHES(5)	NATIONAL ACME EA74050100	AB-7 HARSH AXC/05-620	C A1	C		LATER YES	N/A N/A	LATER	T		SP301-S05-00
1 1B21 F 0028B	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM MAIN STEAM ISOLATION VALVE-OUTBOARD 79305 LIMIT SWITCHES(5)	NATIONAL ACME EA74050100	AB-7 HARSH AXC/04-620	C A1	C		LATER YES	N/A N/A	LATER	T		SP301-S05-00
1 1B21 F 0028C	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM MAIN STEAM ISOLATION VALVE-OUTBOARD 79305 LIMIT SWITCHES(5)	NATIONAL ACME EA74050100	AB-7 HARSH AXC/06-620	C A1	C		LATER YES	N/A N/A	LATER	T		SP301-S05-00
1 1B21 F 0028D	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM MAIN STEAM ISOLATION VALVE-OUTBOARD 79305 LIMIT SWITCHES(5)	NATIONAL ACME EA74050100	AB-7 HARSH AXC/05-620	C A1	C		LATER YES	N/A N/A	LATER	T		SP301-S05-00
1B33 N 0419	REACTOR RECIRC VALVE FLOW CONTROL LIMIT SWITCH FOR VLV F019 79305 LIMIT SWITCH	NATIONAL ACME EA18031302	DW-1 HARSH C I/02-620	C A1	J		LATER YES	N/A N/A H2	LATER	T		

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E79305 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP793-005

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	PT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M	QUALIFICATION LF/MI	SUMMARY
1B33 N 0420	REACTOR RECIRC VALVE FLOW CONTROL	NATIONAL ACME	CT-3	C	A1	J	LATER	N/A		LATER	T		
	LIMIT SWITCH FOR VLV F020	EA18031302	HARSH					N/A					
	79305 LIMIT SWITCH		C 0/02-620				YES	H2					
1 1C11 F 0010	CONTROL ROD DRIVE HYDRAULIC CONTROL	NATIONAL ACME	CT-4	C	A1	J	LATER	N/A		LATER	T		
	LIMIT SWITCH FOR VALVE 1C11F010	EA18011302/12302	HARSH					N/A					
	79305 LIMIT SWITCH		C 0/02-642				YES	H2					
1 1C11 F 0011	CONTROL ROD DRIVE HYDRAULIC CONTROL	NATIONAL ACME	CT-3	C	A1	J	LATER	N/A		LATER	T		
	LIMIT SWITCH FOR VALVE 1C11F011	EA18011302/12302	HARSH					N/A					
	79305 LIMIT SWITCH		C 0/09-620				YES	H2					
1 1C11 F 0180	CONTROL ROD DRIVE HYDRAULIC SYSTEM	NAMCO	CT-4	C	A1	J		N/A			T		
	LIMIT SWITCH FOR VALVE 1C11F180	EA18011302/12302	HARSH					N/A					
	79305 LIMIT SWITCH		C 0/02-642				YES	H2					
1 1C11 F 0181	CONTROL ROD DRIVE HYDRAULIC SYSTEM	NAMCO	CT-3	C	A1	J		N/A			T		
	LIMIT SWITCH FOR VALVE 1C11F181	EA18011302/12302	HARSH					N/A					
	79305 LIMIT SWITCH		C 0/09-620				YES	H2					
1C41 F 0008	STANDBY LIQUID LEVEL CONTROL	NATIONAL ACME	DW-1	C	A1	J	LATER	N/A		LATER	T		
	SLC TO HPCS ISO.	EA74080100	HARSH					N/A					
	79305 LIMIT SWITCH		C I/13-630				YES	H2					
1C41 F 0031	STANDBY LIQUID LEVEL CONTROL	NATIONAL ACME	CT-4	C	A1	J	LATER	N/A		LATER	T		
	TEST TNK SUPPLY	EA74020000/20001	HARSH					N/A					
	79305 LIMIT SWITCH		C 0/14-664				YES	H2					
1C71 N 0006A	REACTOR PROTECTION SYSTEM	NATIONAL ACME	TB-1	A	A1	A	YES	N/A			T	40Y	SP793-005-02
	LIMIT SWITCH FOR VALVE 1N11F200C	EA17051302	HARSH					N/A				40Y	
	79305 163C1303 LIMIT SWITCH		TBE/14-620				YES						
1C71 N 0006B	REACTOR PROTECTION SYSTEM	NATIONAL ACME	TB-1	A	A1	A	YES	N/A			T	40Y	SP793-005-02
	LIMIT SWITCH FOR VALVE 1N11F200C	EA17051302	HARSH					N/A				40Y	
	79305 163C1303 LIMIT SWITCH		TBE/14-620				YES						
1C71 N 0006C	REACTOR PROTECTION SYSTEM	NATIONAL ACME	TB-1	A	A1	A	YES	N/A			T	40Y	SP793-005-02
	LIMIT SWITCH FOR VALVE 1N11F200D	EA17051302	HARSH					N/A				40Y	
	79305 163C1303 LIMIT SWITCH		TBE/14-620				YES						
1C71 N 0006D	REACTOR PROTECTION SYSTEM	NATIONAL ACME	TB-1	A	A1	A	YES	N/A			T	40Y	SP793-005-02
	LIMIT SWITCH FOR VALVE 1N11F200B	EA17051302	HARSH					N/A				40Y	
	79305 163C1303 LIMIT SWITCH		TBE/14-620				YES						

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E79305 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP793-005

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI	SUMMARY
1C71 N 0006E	REACTOR PROTECTION SYSTEM	NATIONAL ACME	TB-1	A	A1	C	YES	N/A			T 40Y	SP793-005-02
	LIMIT SWITCH FOR VALVE 1N11F200A	EA17051302	HARSH					N/A			40Y	
	79305 163C1303 LIMIT SWITCH		TBE/14-620				YES					
1C71 N 0006F	REACTOR PROTECTION SYSTEM	NATIONAL ACME	TB-1	A	A1	C	YES	N/A			T 40Y	SP793-005-02
	LIMIT SWITCH FOR VALVE 1N11F200D	EA17051302	HARSH					N/A			40Y	
	79305 163C1303 LIMIT SWITCH		TBE/14-620				YES					
1C71 N 0006G	REACTOR PROTECTION SYSTEM	NATIONAL ACME	TB-1	A	A1	A	YES	N/A			T 40Y	SP793-005-02
	LIMIT SWITCH FOR VALVE 1N11F200B	EA17051302	HARSH					N/A			40Y	
	79305 163C1303 LIMIT SWITCH		TBE/14-620				YES					
1C71 N 0006H	REACTOR PROTECTION SYSTEM	NATIONAL ACME	TB-1	A	A1	A	YES	N/A			T 40Y	SP793-005-02
	LIMIT SWITCH FOR VALVE 1N11F200A	EA17051302	HARSH					N/A			40Y	
	79305 163C1303 LIMIT SWITCH		TBE/14-620				YES					
1E12 F 0010	RESIDUAL HEAT REMOVAL SYSTEM	NATIONAL ACME	DW-1	C	A1	J	LATER	N/A	LATER	T		
	SHUTDOWN SUTION LINE BLOCK VAL	EA18011302/12302	HARSH					N/A				
	79305 LIMIT SWITCH		C I/01-599				YES	H2				
1 1E12 F 0039A	RESIDUAL HEAT REMOVAL SYSTEM	NATIONAL ACME	DW-1	C	A1	J	LATER	N/A	LATER	T		
	LIMIT SWITCH FOR VALVE 1E12F039A	EA74020100	HARSH					N/A				
	79305 LIMIT SWITCH		C I/02-620				YES	H2				
1 1E12 F 0039B	RESIDUAL HEAT REMOVAL SYSTEM	NATIONAL ACME	DW-1	C	A1	J	LATER	N/A	LATER	T		
	LIMIT SWITCH FOR VALVE 1E12F039B	EA74020100	HARSH					N/A				
	79305 LIMIT SWITCH		C I/11-620				YES	H2				
1 1E12 F 0039C	RESIDUAL HEAT REMOVAL SYSTEM	NATIONAL ACME	DW-1	C	A1	J	LATER	N/A	LATER	T		
	LIMIT SWITCH FOR VALVE 1E12F039C	EA74020100	HARSH					N/A				
	79305 LIMIT SWITCH		C I/07-620				YES	H2				
1E12 N 0466A	RESIDUAL HEAT REMOVAL	NATIONAL ACME	AB-6	C	A4	J	LATER	N/A	LATER	T		
	LIMIT SWITCH FOR VALVE 1E12F066A	EA74020100	MILD					N/A				
	79305 LIMIT SWITCH		AXB/06-568									
1E12 N 0466B	RESIDUAL HEAT REMOVAL	NATIONAL ACME	AB-6	C	A4	J	LATER	N/A	LATER	T		
	LIMIT SWITCH FOR VALVE 1E12F066B	EA74020100	MILD					N/A				
	79305 LIMIT SWITCH		AXB/04-568									
1 1E21 F 0007	LOW PRESSURE CORE SPRAY	NATIONAL ACME	DW-1	C	A1	J	LATER	N/A	LATER	T		
	LIMIT SWITCH FOR VALVE 1E21F007	EA74020100	HARSH					N/A				
	79305 LIMIT SWITCH		C I/06-620				YES	H2				

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E79305 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP793-005

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT ELEV	EC FT DEMO SEAL	OPER RES TME H2/H2 DEMO	ACC DEMO	ACC/RT M LF/MI	QUALIFICATION SUMMARY
1 1E22 F 0036	HIGH PRESSURE CORE SPRAY SYSTEM	NATIONAL ACME	DW-1	C	A1	J LATER	N/A	LATER	T
	LIMIT SWITCH FOR VALVE 1E22F036	EA74020100	HARSH				N/A		
	79305 LIMIT SWITCH		C I/12-620			YES H2			
1E51 N 0404	REACTOR CORE ISOLATION COOLING	NATIONAL ACME	AB-3	C	A1	J LATER	N/A	LATER	T
	LIMIT SWITCH FOR VALVE F004	EA18031302	HARSH				N/A		
	79305 LIMIT SWITCH		AXB/05-574			YES			
1E51 N 0405	REACTOR CORE ISOLATION COOLING	NATIONAL ACME	AB-3	C	A1	A LATER	N/A	LATER	T
	LIMIT SWITCH FOR VALVE F005	EA18031302	HARSH				N/A		
	79305 LIMIT SWITCH		AXB/05-574			YES			
1E51 N 0425	REACTOR CORE ISOLATION COOLING	NATIONAL ACME	AB-3	C	A1	J LATER	N/A	LATER	T
	LIMIT SWITCH FOR VALVE F025	EA18031302	HARSH				N/A		
	79305 LIMIT SWITCH		AXC/05-574			YES			
1E51 N 0426	REACTOR CORE ISOLATION COOLING	NATIONAL ACME	AB-3	C	A1	A LATER	N/A	LATER	T
	LIMIT SWITCH FOR VALVE F026	EA18031302	HARSH				N/A		
	79305 LIMIT SWITCH		AXC/05-574			YES			
1E51 N 0454	REACTOR CORE ISOLATION COOLING	NATIONAL ACME	AB-3	C	A1	J LATER	N/A	LATER	T
	LIMIT SWITCH FOR VALVE F054	EA18031302	HARSH				N/A		
	79305 LIMIT SWITCH		AXC/05-574			YES			
1M14 N 0041	CONTAINMENT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-0	C	A1	A LATER	N/A	LATER	T
	LIMIT SWITCH FOR VLV F040	EA74020100	HARSH				N/A		
	79305 LIMIT SWITCH		C 0/12-689			YES			
1M14 N 0042	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-0	C	A1	A LATER	N/A	LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F040	EA74020100	HARSH				N/A		
	79305 LIMIT SWITCH		C 0/12-689			YES			
1M14 N 0046	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-1	C	A3	A LATER	N/A	LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F045	EA74020100	HARSH				N/A		
	79305 LIMIT SWITCH		C 0/12-689			YES H2			
1M14 N 0056A	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	DW-1	C	A3	A LATER	N/A	LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F055A	EA74020100	HARSH				N/A		
	79305 LIMIT SWITCH		C I/07-620			YES H2			
1M14 N 0056B	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-3	C	A3	A LATER	N/A	LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F055B	EA74020100	HARSH				N/A		
	79305 LIMIT SWITCH		C 0/07-620			YES H2			

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E79305 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP793-005

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC FT ELEV	OPER DEMO SEAL	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	QUALIFICATION M LF/MI SUMMARY
1M14 N 0061A	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	DW-1	C	A3	A LATER	N/A		LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F060A	EA74020100	HARSH				N/A			
	79305 LIMIT SWITCH		C I/16-620			YES	H2			
1M14 N 0061B	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-3	C	A3	A LATER	N/A		LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F060B	EA74020100	HARSH				N/A			
	79305 LIMIT SWITCH		C O/16-620			YES	H2			
1M14 N 0066	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-1	C	A3	A LATER	N/A		LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F065	EA74020100	HARSH				N/A			
	79305 LIMIT SWITCH		C O/13-652			YES	H2			
1M14 N 0071	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-1	C	A3	A LATER	N/A		LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F070	EA74020100	HARSH				N/A			
	79305 LIMIT SWITCH		C O/13-652			YES	H2			
1M14 N 0086	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-1	C	A3	A LATER	N/A		LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F085	EA74020100	HARSH				N/A			
	79305 LIMIT SWITCH		C O/13-664			YES	H2			
1M14 N 0091	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-0	C	A1	A LATER	N/A		LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F090	EA74020100	HARSH				N/A			
	79305 LIMIT SWITCH		C O/13-664			YES				
1M14 N 0092	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-0	C	A1	A LATER	N/A		LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F090	EA74020100	HARSH				N/A			
	79305 LIMIT SWITCH		C O/13-664			YES				
1M14 N 0191	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-1	C	A1	A LATER	N/A		LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F190	EA74020100	HARSH				N/A			
	79305 LIMIT SWITCH		C O/12-689			YES	H2			
1M14 N 0201	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-4	C	A1	A LATER	N/A		LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F200	EA74020100	HARSH				N/A			
	79305 LIMIT SWITCH		C O/12-664			YES	H2			
1M14 N 0202	CTMT VESSEL AND DRYWELL PURGE	NATIONAL ACME	CT-4	C	A1	A LATER	N/A		LATER	T
	LIMIT SWITCH FOR DAMPER 1M14F200	EA74020100	HARSH				N/A			
	79305 LIMIT SWITCH		C O/12-664			YES	H2			
1P51 N 0151	SERVICE AIR SYSTEM	NATIONAL ACME	FB-1	C	A4	J LATER	N/A		LATER	T
	LIMIT SWITCH FOR VLV F150	EA18031302	MILD				N/A			
	79305 LIMIT SWITCH		IBC/03-599							

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-793-09
MANUFACTURER'S QUALIFICATION REPORT NO. (6) REV.
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION Multi-Cable-Transit (MCT)
MANUFACTURER/MODEL NO. Nelson Electric/RGS-6
TESTED DEVICE MODEL NO. RGS-6

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	DW-1	135°F	8,401 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-1	122°F	3,501 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	141/135°F	300 Hours
Hot Standby	CT-4	105/104°F	26,400 Hours
SRVD	CT-4	120°F Max.	1,836 Hours
RADIATION DOSE (RADS, TID)	DW-1	$2.8 \times 10^7 \gamma$ (2) 1.0×10^{15} Ntn	40 Years

(6) ACCELERATED AGING TEMP./TIMES
QUALIFIED LIFE/MAINTENANCE INTERVAL
LIFE-LIMITING COMPONENT
TEST RADIATION DOSE (TID) (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED (6)
EQUIPMENT CATEGORY (EC)	A1	
FUNCTION TIME (FT)	J (180 Days)	
ACCURACY (ACC) (4)	N/A	
RESPONSE TIME (RT)	N/A	

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED (6)	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F		
PRESSURE (PSIG)	CT-4/DW-1	17.8 (5)		
R.H. (%)	DW-1	Steam		N/A
SPRAY	CT-4	Demin. Water		N/A
SUBMERGENCE	N/A	N/A		N/A
RADIATION (RADS)	DW-1/CT-4	$2.7 \times 10^8 \gamma / 1.1 \times 10^8 \beta$	(2)	

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig 12/2/84
CHECKED BY Eddie B. Thomas Jr. 12-14-84
APPROVED BY [illegible] 12/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-793-09

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Maximum differential pressure across MCT between DW-1 and CT-4.

6. Qualification test plan is being developed. Test values are not available at this time. The test plan is to be finalized by February 29, 1984, and testing is to be completed before the end of 1984.

HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]	
ABLE CONNECT-RS	33	BURNDY	YAES-K, YAV	N/A	VARIOUS	VARIOUS	VARIOUS		A1, J	N/
ERMINAL BLOCKS	33	BUCHANON	NQB, NQO	N/A	TERMINAL BOX	VARIOUS	ALL EXCEPT DW, CT-1, CT-7, CT-8		A1, J	N/
PLICING AND ERMINATING RODUCTS	33	RAYCHEM	NMCK, NESK NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	VARIOUS	VARIOUS		A1, J	N/
ABLE	559	ANACONDA	VARIOUS 5-15KV POWER	N/A	TRAY, CONDUIT	VARIOUS	VARIOUS, Except DW		A1, J	N/
ABLE	560	ROCKBESTOS	VARIOUS Small Pwr. & Control	N/A	CONDUIT	C	DW		A1, J	N/
					TRAY, CONDUIT	C	CT		A1, J	N/
					TRAY, CONDUIT	OUTSIDE REACTOR BUILDING	VARIOUS		A1, J	N/

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-793-11
MANUFACTURER'S QUALIFICATION REPORT NO. (5) REV.
QUALIFICATION METHOD (5)
EQUIPMENT DESCRIPTION Hydrogen Igniter Distribution Panels
MANUFACTURER/MODEL NO. (5)
TESTED DEVICE MODEL NO. (5)

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-4	104°F	7,731 Hours
AVERAGE	CT-4	87°F	322,115 Hours
MINIMUM	CT-4	62°F	3,221 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Hot Standby	CT-4	105/104°F	26,400 Hours
Loss of HVAC	CT-4	131/104°F	49 Hours
SRVD	CT-4	120°F Max.	1,836 Hours
RADIATION DOSE (RADS, TID)	CT-4	2.71×10^5 (2)	40 Years

(5) ACCELERATED AGING TEMP./TIMES
QUALIFIED LIFE/MAINTENANCE INTERVAL
LIFE-LIMITING COMPONENT
TEST RADIATION DOSE (TID) (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED (5)
EQUIPMENT CATEGORY (EC)	A1	
FUNCTION TIME (FT)	J (180 Days)	
ACCURACY (ACC) (4)	N/A	
RESPONSE TIME (RT)	N/A	

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED (5)	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	CT-4	184.6°F		
PRESSURE (PSIG)	CT-4	12.0		
R.H. (%)	CT-4	100		N/A
SPRAY	CT-7	Demin. Water		N/A
SUBMERGENCE	N/A	N/A		N/A
RADIATION (RADS)	CT-4	$1.8 \times 10^7 \gamma$, $1.1 \times 10^8 \beta$	(2)	

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV. NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig 12/2/84
CHECKED BY Eddie B. Thomas Jr. 12-21-84
APPROVED BY M. A. Mathieny 12/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-793-11

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Qualification information on this equipment is not available at this time due to the equipment being in the vendor bidding stage.

SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY

SELECT : 09E79311 AS OF 00636 03/22/84
SELECT :
SORT : 01
TITLE : EQRL SP793-011

EQUIPMENT NUMBER	SERVICE DESCRIPTION SP NO 1 GE PURCH DWG	MANUFACTURER MODEL EQUIP. DESCRIPTION	ZONE LOCATION	QUALD CAT	EC ELEV	FT SEAL	OPER DEMO	ACC RES H2/H2	TME DEMO	ACC/RT DEMO	M LF/MI	QUALIFICATION SUMMARY
1M56 P 0003	HYDROGEN IGNITER SYSTEM		CT-4	D	A1	J		N/A				
	DIST. PNL. FOR HYDROGEN IGNITERS		HARSH						N/A			
	79311	DISTRIBUTION PANEL	C 0/06-642						YES			
1M56 P 0004	HYDROGEN IGNITER SYSTEM		CT-4	D	A1	J		N/A				
	DIST. PNL. FOR HYDROGEN IGNITERS		HARSH						N/A			
	79311	DISTRIBUTION PANEL	C 0/17-642						YES			
1M56 P 0005	HYDROGEN IGNITER SYSTEM		CT-4	D	A1	J		N/A				
	DIST. PNL. FOR HYDROGEN IGNITERS		HARSH						N/A			
	79311	DISTRIBUTION PANEL	C 0/17-642						YES			
1M56 P 0006	HYDROGEN IGNITER SYSTEM		CT-7	D	A1	J		N/A				
	DIST. PNL. FOR HYDROGEN IGNITERS		HARSH						N/A			
	79311	DISTRIBUTION PANEL	C 0/17-652						YES			
1M56 P 0007	HYDROGEN IGNITER SYSTEM		CT-4	D	A1	J		N/A				
	DIST. PNL. FOR HYDROGEN IGNITERS		HARSH						N/A			
	79311	DISTRIBUTION PANEL	C 0/11-642						YES			
1M56 P 0008	HYDROGEN IGNITER SYSTEM		CT-4	D	A1	J		N/A				
	DIST. PNL. FOR HYDROGEN IGNITERS		HARSH						N/A			
	79311	DISTRIBUTION PANEL	C 0/06-642						YES			

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-793-12-1
MANUFACTURER'S QUALIFICATION REPORT NO. IPS-409 (Part of IPS-713) REV. A
QUALIFICATION METHOD Test and Analysis
EQUIPMENT DESCRIPTION Electric Conductor Seal Assembly (ECSA)
MANUFACTURER/MODEL NO. Conax Corp./Various - See Section 2 of AFP
TESTED DEVICE MODEL NO. Various, Ref. Table 3.3 of Test Report

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	DW-1	135°F	8,401 Hours
AVERAGE	DW-1	134°F	338,149 Hours
MINIMUM	DW-4	133°F	3,504 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Scram	DW-1	Max. 141°F	300 Hours
Loss of HVAC	DW-1	Max. 136°F	49 Hours
RADIATION DOSE (RADS, TID)	DW-2	4.5×10^7 (2)	40 Years

ACCELERATED AGING TEMP./TIMES 30°F to 150°F/5 Cycles, 35°F to 145°F/20 Cycles, 249.8°F/169 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL 40 Years/None
LIFE-LIMITING COMPONENT None
TEST RADIATION DOSE (TID) 2.238×10^8 Rads (2)

OPERABILITY SUMMARY:

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED
EQUIPMENT CATEGORY (EC)	A1	Energized & Loaded - Rated Voltage and 6 Amps.
FUNCTION TIME (FT)	(J) 180 Days	30-Day LOCA Test Extended to 180 Days by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	DW-1	330°F	340°F	10°F (Note 5)
PRESSURE (PSIG)	DW-1	22.1 PSIG	128 PSIG	105.9 PSIG
R.H. (%)	DW-1	Steam	Steam	N/A
SPRAY	DW-1	Demineralized Water	Borated & Demin. Water	N/A
SUBMERGENCE	N/A	N/A	N/A	N/A
RADIATION (RADS)	DW-1	9.3×10^7 Rads	17.88×10^7 Rads (2)	8.58×10^7 Rads 92%

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV. NO.	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY G. S. Koenig 3/16/84
CHECKED BY Eddie B. Thomas 3-19-84
APPROVED BY [illegible] 3/20/84

QUALIFICATION SUMMARY (FILE NO.) SP-793-12-1

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Acceptable through instrument accuracy analysis.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Interface Seals	793-12	CONAX	PL-Gland	N/A	N/A	Various	Various		A1, J	N/A
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A

PERRY NUCLEAR POWER PLANT
SYSTEM COMPONENT EVALUATION WORKSHEET
(FOR CLASS 1E EQUIPMENT IN HARSH ENVIRONMENT)

QUALIFICATION SUMMARY (FILE NO.) SP-793-12
MANUFACTURER'S QUALIFICATION REPORT NO. IPS-1093 (6) REV. B
QUALIFICATION METHOD Test
EQUIPMENT DESCRIPTION PL Gland
MANUFACTURER/MODEL NO. Conax Corp./Various
TESTED DEVICE MODEL NO. PL Gland - 6 Different Specimens

AGING SUMMARY:

NORMAL/ABNORMAL ENVELOPE	LIMITING ENVIRON.ZONE (1)	VALUE	DURATION
TEMPERATURE (°F): MAXIMUM	CT-6	144°F	8,408 Hours
AVERAGE	CT-6	130°F	338,440 Hours
MINIMUM	TB-1	98°F	3,503 Hours
ABNORMAL TEMP. TRANSIENTS (°F):			
Loss of HVAC	AB-5	258/128°F	49 Hours
Plant Shutdown	AB-4	147/113°F	1,499 Hours
RADIATION DOSE (RADS, TID)	CT-5	$2.8 \times 10^7 \gamma$ (2)	40 Years

ACCELERATED AGING TEMP./TIMES (6) 302°F/1,124 Hours
QUALIFIED LIFE/MAINTENANCE INTERVAL (6) 40 Years/None
LIFE-LIMITING COMPONENT (6) None
TEST RADIATION DOSE (TID) (6) 2.25×10^8 Rads (Gamma) (2)

OPERABILITY SUMMARY

FUNCTION	REQUIREMENTS (3)	QUALIFICATION DEMONSTRATED (6)
EQUIPMENT CATEGORY (EC)	A1	Energized and Loaded (Rated voltage & current & margin).
FUNCTION TIME (FT)	J (180 Days)	30 Day Test to be Extended by Analysis
ACCURACY (ACC) (4)	N/A	N/A
RESPONSE TIME (RT)	N/A	N/A

ACCIDENT SUMMARY

ENVIRONMENTAL PARAMETER	REQUIRED ENVELOPE		QUALIFICATION DEMONSTRATED	
	LIMITING ENVIRON.ZONE (1)	MAXIMUM VALUE	MAXIMUM VALUE	MARGIN
TEMPERATURE (°F)	AB-7	310°F	500°F	190
PRESSURE (PSIG)	CT-1	12	70	58
R.H. (%)	AB-7	Steam	Steam	N/A
SPRAY	CT-1	Demin. Water	Borated Water	N/A
SUBMERGENCE	CT-2	5 Seconds	5 Seconds	N/A
RADIATION (RADS)	CT-1	$4.2 \times 10^7 \gamma$ (5)	$19.7 \times 10^7 \gamma$ (2)	15.5×10^7

(FOR SUPPLEMENTAL NOTES SEE PAGE 2)

REV.NO	DATE	INITIALS		
		REVIEW	CHECKED	APPROVED
/		/	/	
/		/	/	
/		/	/	

REVIEWED BY C. J. Gosch 12/2/84
CHECKED BY Eddie B. Thomas Jr. 12-21-84
APPROVED BY [illegible] 12/19/84

QUALIFICATION SUMMARY (FILE NO.) SP-793-12

SUPPLEMENTAL NOTES:

1. See FSAR Tables 3.11-1 thru 8.

2. A portion of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Normal/Abnormal radiation dose (for the desired qualified life). The remainder of the "TEST RADIATION DOSE (RADS, TID)" is applied to qualify the device for the required Accident radiation dose (for the required function time) plus 10% margin.

   TEST RAD. DOSE $\geq$ NORMAL/ABNORMAL RAD (Qual.Life) + (ACCIDENT RAD DOSE (FT) + 10% MARGIN)

3. "OPERABILITY SUMMARY : REQUIREMENTS" are as specified in the Environmental Qualification Review List (EQRL) report titled "SAFETY RELATED EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL QUALIFICATION SUMMARY."

4. Source of accuracy requirements:

   N/A

5. Beta radiation not included due to shielding of insulation provided by conduit and connected device.

6. IPS-1093 is a design qualification test plan. Testing is currently in progress with completion expected by June, 1984. All "qualification demonstrated" values, aging, qualified life and test values were obtained from the test plan.

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
MCT (Multiple Cable Transit)	33 (793-09)	NELSON	RGS-6	N/A	Drywell Wall	C	CT		A1, J	N/A
Cable Connectors	33	BURNDY	YAES-K, YAV, YAV, YSV, YRV-L, YA, YS	N/A	Various	Various	Various		A1, J	N/A
Terminal Blocks	33	BUCHANON	NQB, NQO	N/A	Terminal Box	Various	All except DW, CT-1, CT-7, CT-8		A1, J	N/A
Splicing & Terminating Products	33	RAYCHEM	NMCK, NESK, NCBK, NPKV WCSF-N NCBK, NPKV,	N/A	N/A	Various	Various		A1, J	N/A
Cable	559	ANACONDA	Various 5-15KV Power	N/A	Tray, Conduit	Various	Various, Except DW		A1, J	N/A
Cable	560	ROCKBESTOS	Various Small Pwr. & Control	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	561	BRAND REX	Various Instrumentation Cable	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray Conduit	Outside Reactor Building	Various		A1, J	N/A

SAFETY RELATED MATERIALS OF CONSTRUCTION

IN A HARSH ENVIRONMENT

EQUIPMENT DESCRIPTION	SPEC.	MANUFACTURER	MODEL NUMBER	ELEM. DIAG.	SUPPORT	LOCATION	ENV. ZONE	DAMPING LOADS	OPER. REG.	ACC RT
Cable	567	SAMUEL MOORE	Various Thermo-Couple	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
Cable	793-01	ROCKBESTOS	Various Instr., Control Coaxial	N/A	Conduit	C	DW		A1, J	N/A
					Tray, Conduit	C	CT		A1, J	N/A
					Tray, Conduit	Outside Reactor Building	Various		A1, J	N/A
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]	[redacted]
Interface Seals	793-12	CONAX	ECSA	N/A	N/A	Various	Various		A1, J	N/A