SAFETY EVALUATION REPORT
OFFICE OF NUCLEAR REACTOR REGULATION
HATCH UNITS 1 AND 2
DOCKETS NOS. 50-321 AND 50-366

ENVIRONMENTAL QUALIFICATION OF ELECTRIC EQUIPMENT IMPORTANT TO SAFETY

INTRODUCTION

Equipment which is used to perform a necessary safety function must be demonstrated to be capable of maintaining functional operability under all service conditions postulated to occur during its installed life for the time it is required to operate. This requirement, which is embodied in General Design Criteria 1 and 4 of Appendix A and Sections III, XI, and XVII of Appendix B to 10 CFR 50, is applicable to equipment located inside as well as outside containment. More detailed requirements and guidance relating to the methods and procedures for demonstrating this capability for electrical equipment have been set forth in 10 CFR 50,49, "Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants," NUREG-0588, "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment" (which supplements IEEE Standard 323 and various NRC Regulatory Guides and industry standards), and "Guidelines for Evaluating Environmental Qualification of Class IE Electrical Equipment in Operating Reactors" [NRC Division of Operating Reactors (DOR) Guidelines].

BACKGROUND

On February 8, 1979, the NRC Office of Inspection and Enforcement (IE) issued to all licensees of operating plants (except those included in the systematic evaluation program (SEP)) IE Bulletin (IEB) 79-01, "Environmental Qualification of Class IE Equipment." This Bulletin, together with IE Circular 78-08 (issued on May 31, 1978), required the licensees to perform reviews to assess the adequacy of their environmental qualification programs.

On January 14, 1980, NRC issued IEB 79-01B which included the DOR Guidelines and NUREG-0588 as attachments 4 and 5, respectively. Subsequently, on May 23, 1980, Commission Memorandum and Order CLI-80-21 was issued and stated that the DOR Guidelines and portions of NUREG-0588 form the requirements that licensees must meet regarding environmental qualification of safety-related electrical equipment in order to satisfy those aspects of 10 CFR 50, Appendix A, General Design Criterion (GDC) 4. Supplements to IEB 79-01B were issued for further clarification and definition of the staff's needs. These supplements were issued on February 29, September 30, and October 24, 1980.

In addition, the staff issued orders dated August 29, 1980 (amended in September 1980) and October 24, 1980 to all licensees. The August order required that the licensees provide a report, by November 1, 1980, documenting the qualification of safety-related electrical equipment. The October order required the establishment of a central file location for the maintenance of all equipment qualification records. The central file was mandated to be established by December 1, 1980. The staff subsequently issued a Safety Evaluation Report (SER) on environmental qualification of safety-related electrical equipment to the licensee on June 16, 1981. This SER directed the licensee to "either provide documentation of the missing qualification information which demonstrates that safety-related equipment meets the DOR Guidelines or NUREG-0588 requirements or commit to a corrective action (requalification, replacement (etc.))." The licensee was required to respond to NRC within 90 days of receipt of the SER. In response to the staff SER issued in 1981, the licensee submitted additional information regarding the qualification of safety-related electrical equipment. This information was evaluated for the staff by the Franklin Research Center (FRC) in order to: 1) identify all cases where the licensee's response did not resolve the significant qualification issues, 2) evaluate the licensee's qualification documentation in accordance with established criteria to determine which equipment had adequate documentation and which did not, and 3) evaluate the licensee's qualification documentation for safety-related electrical equipment located in harsh environments required for TMI Lessons Learned Implementation. A Technical Evaluation Report (TER) was issued by FRC on January 21, 1983. A Safety Evaluation Report was sub-

sequently issued to the Georgia Power Company on March 31, 1983, with the FRC TERs as an attachment.

A final rule on environmental qualification of electric equipment important to safety for nuclear power plants became effective on February 22, 1983. This rule, Section 50.49 of 10 CFR 50, specifies the requirements of electrical equipment important to safety located in a harsh environment. In accordance with this rule, equipment for Hatch Units 1 and 2 may be qualified to the criteria specified in either the DOR Guidelines or NUREG-0588, except for replacement equipment. Replacement equipment installed subsequent to February 22, 1983 must be qualified in accordance with the provisions of 10 CFR 50.49, using the guidance of Regulatory Guide 1.89, unless there are sound reasons to the contrary.

A meeting was held with each licensee of plants for which a TER had been prepared for the staff by FRC in order to discuss all remaining open issues regarding environmental qualification, including acceptability of the environmental conditions for equipment qualification purposes, if this issue had not yet been resolved. On February 14, 1984, a meeting was held to discuss Georgia Power's proposed method to resolve the environmental qualification deficiencies identified in the March 31, 1983 SERs and January 21, and February 8, 1983 FRC TERs. Discussions also included Georgia Power's general methodology for compliance with 10 CFR 50.49, and justification for continued operation for those equipment items for which environmental qualification is not yet completed. The minutes of the meeting and proposed method of resolution for each of the environmental qualification deficiencies are documented in March 30 and June 4, 1984 submittals from the licensee.

By letter dated April 4, 1985, the staff informed the licensee of its still unresolved deficiencies. The licensee responded by letter dated May 10, 1985 with its proposed resolution of the deficiencies.

EVALUATION

The evaluation of the acceptability of the licensee's electrical equipment environmental qualification program is based on the results of an audit review performed by the staff of: (1) the licensee's proposed resolutions of the environmental qualification deficiencies identified in the March 31, 1983 SERs and January 21, 1983 and February 8, 1985 FRC TER; (2) compliance with the requirements of 10 CFR 50.49; and (3) justification for continued operation (JCO) for those equipment items for which the environmental qualification is not yet completed.

Proposed Resolutions of Identified Deficiencies

The proposed resolutions for the equipment environmental qualification deficiencies, identified in the March 31, 1983 SERs, and the FRC TERs enclosed with them were described in the licensee's March 30 and June 4, 1984 submittals. During the February 14, 1984 meeting with the licensee, the staff discussed the proposed resolution of each deficiency for each equipment item identified in the FRC TERs and found the licensee's approach for resolving the identified environmental qualification deficiencies acceptable. The majority of deficiencies identified were documentation, similarity, aging, qualified life and replacement schedule. All open items identified in the SERs dated March 31, 1983 were also discussed and the resolution of these items, with the exception of the containment pressure/temperature (P/T) profiles, was subsequently found acceptable by the staff. The licensee had taken credit for early manual initiation of the drywell spray (10 minutes into the transient) thus eliminating the long period of superheated steam conditions that are present in the drywell temperature equipment qualification profiles for other Mark I plants. Based on our review of the spray system dependencies and operator actions needed to initiate the sprays, we found that credit for drywell sprays as early as 10 minutes following onset of a transient was unacceptable. By letter dated April 4, 1985 we informed the licensee of our concerns and provided guidance with respect to resolution of the issue. We provided a drywell temperature profile based on actuation of the drywell sprays 30 minutes following onset of the transient and asked the licensee to demonstrate that it could initiate the drywell sprays within this time interval and to evaluate the equipment that will be exposed to the drywell environment against this temperature profile.

The licensee responded to our request by letter dated May 10, 1985. The licensee informed us that, for a small break (SB) LOCA, the low pressure injection system is not required to maintain the core covered and cooled. In its analysis submitted in a letter dated February 24, 1984, the licensee assumed that the low pressure injection system was immediately available for and dedicated to drywell spray for SB LOCAs. For larger LOCA's, the licensee informed us that the resultant drywell temperature profile is less severe than for SB LOCAs without drywell spray and that therefore, drywell spray operation is not necessary to ensure equipment qualification survival for line breaks greater than 0.5 ft^2.

The licensee stated that it is formulating new emergency operating procedures (EOPs). These procedures will effectively require operator action to initiate drywell sprays within 30 minutes for in-containment high energy line breaks that would otherwise produce an environment harsher that that for which drywell equipment has been qualified. The licensee has acted out these accident scenarios using the Hatch main control room simulator and the new EOPs. In each case, the drywell sprays were initiated by operator action within 30 minutes of commencement of the simulated break. The licensee has revised the emergency procedures currently in use at Hatch which deal with operator action to initiate drywell sprays. The revisions require operator action upon occurrence of the same parameters used for manual spray initiation in the new EOPs. Confirmation of the revised procedures will be obtained using the control room simulator.

We conclude, on the basis of our review of the licensee response as discussed above, that the drywell sprays can be manually actuated when required, within 30 minutes following the onset of an accident. This will assure that the drywell environment will not be harsher than the temperature profile provided by the staff which was based on drywell spray actuation at 30 minutes.

The licensee also responded that environmental test data and analyses currently on file demonstrate that each piece of equipment (in the drywell) will continue to perform its intended function for the required time interval during and after exposure to the temperature profile provided in our April 4, 1985 letter.

On consideration of this information, we conclude that the pressure temperature profile issue is acceptably resolved.

The approach described by the licensee for addressing and resolving the identified deficiencies includes replacing equipment, performing additional analyses, utilizing additional qualification documentation beyond that reviewed by FRC, obtaining additional qualification documentation and determining that some equipment is outside the scope of 10 CFR 50.49, and therefore not required to be environmentally qualified, e.g., located in a mild environment. We discussed the proposed resolutions in detail on an item by item basis with the licensee during the December 5, 1983 meeting. Replacing or exempting equipment, for an acceptable reason, are clearly acceptable methods for resolving environmental qualification deficiencies. The more lengthy discussions with the licensee concerned the use of additional analyses or documentation. Although we did not review the additional analyses or documentation, we discussed how analysis was being used to resolve deficiencies identified in the FRC TERs, and the content of the additional documentation in order to determine the acceptability of these methods. The licensee's equipment environmental qualification files will be audited by the staff during follow-up inspections to be performed by Region II, with assistance from IE Headquarters and NRR staff as necessary. Since a significant amount of documentation has already been reviewed by the staff and Franklin Research Center, the primary objective of the file audit will be to verify that they contain the appropriate analyses and other necessary documentation to support the licensee's conclusion that the equipment is qualified. The inspections will verify that the licensee's program for surveillance and maintenance of environmentally qualified equipment is adequate to assure that this equipment is maintained in the as analyzed or tested condition. The method used for tracking periodic replacement of parts, and implementation of the licensee's commitments and actions, e.g., regarding replacement of equipment, will also be verified.

Based on our discussions with the licensee and our review of its submittal, we find the licensee's approach for resolving the identified environmental qualification deficiencies acceptable.

Compliance With 10 CFR 50.49

In its March 30 and June 4, 1984 submittals, the licensee has described the approach used to identify equipment within the scope of paragraph (b)(1) of 10 CFR 50.49 relied upon to remain functional during and following design basis events. The licensee states that the FSAR is the basis for determining the systems required to mitigate the effects of the postulated LOCA and HELB accidents. The LOCA and HELB accidents provide the limiting environmental conditions to which safety related equipment would be exposed. Equipment within the scope of 10 CFR 50.49(b) is qualified to the most severe design basis accident during or following which the equipment is required to remain functional. All design basis events both inside and outside containment, including flooding, which could potentially result in a harsh environment have been identified and evaluated. For areas outside containment which may experience High Energy Line Breaks (HELBs), temperature/pressure profiles that envelope the worst case conditions were developed using methods and assumptions that are documented in the Hatch Final Safety Analysis Reports (FSARs). For equipment inside containment, both Loss Of Coolant Accidents (LOCAs) and HELBs were evaluated. A plant specific analysis of the LOCA for Hatch is documented in the FSARs, while the drywell HELB analysis is contained in the General Electric Company document, NSEO-52-0583. Equipment inside the drywell will be qualified to the temperature/pressure profiles for both types of accidents. Therefore, all design basis events at Hatch Units 1 and 2 were considered within the scope of Paragraph (b)(1) of 10 CFR 50.49. The licensee's approach for identifying equipment within the scope of paragraph (b)(1) is in accordance with the requirements of that paragraph, and therefore acceptable.

The method used by the licensee for identification of electrical equipment within the scope of paragraph (b)(2) of 10 CFR 50.49, nonsafety-related electric equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishment of safety functions, is summarized below:

1. Equipment within the scope of 10 CFR 50.49(b) is qualified to the most severe design basis accident during or following which the equipment is required to remain functional. All design basis events both inside and

outside containment, including flooding, which could potentially result in a harsh environment have been identified and evaluated. For areas outside containment which may experience High Energy Line Breaks (HELBs), temperature/pressure profiles that envelop the worst case conditions were developed using methods and assumptions that are documented in the Hatch Final Safety Analysis Reports (FSARs). For equipment inside containment, both Loss Of Coolant Accidents (LOCAs) and HELBs were evaluated. A plant specific analysis of the LOCA for Hatch is documented in the FSARs, while the drywell HELB analysis is contained in the General Electric Company document, NSEO-52-0583. Equipment inside the drywell will be qualified to the temperature/pressure profiles for both types of accidents.

2. The elementary wiring diagrams of the safety-related electrical equipment identified in item 1 above were reviewed to identify any auxiliary devices electrically connected directly into the control or power circuitry of the safety-related equipment (e.g., automatic trips) whose failure due to postulated environmental conditions could prevent required operation of the safety-related equipment.

3. Auxiliary equipment required to support accident mitigation is included in the Hatch qualification equipment list if it is located in a harsh environment.

4. The GPC review of elementary diagrams included analysis of all circuitry electrically connected to the safety related components. In each situation a review was made to ensure that the non-safety-related circuits were electrically isolated from the safety-related circuits by fuses or circuit breakers.

We find the methodology used by the licensee is acceptable since it provides reasonable assurance that equipment within the scope of paragraph (b)(2) of 10 CFR 50.49 has been identified.

With regard to paragraph (b)(3) of 10 CFR 50.49, the licensee refers to its March 30, 1984 letter for identification of instrumentation and sampling equipment which requires environmental qualification to meet the intent of Regulatory Guide 1.97. The staff has not yet completed its review for con-

formance to Regulatory Guide 1.97. However, in the March 30, 1984 letter the licensee states that GPC is presently not committed to all of the positions of Regulatory Guide 1.97; however, instrumentation which has been or will be classified by GPC as within the scope of categories 1 or 2 of R.G. 1.97, will be qualified to the requirements of 10 CFR 50.49. The staff will determine the acceptability of any exceptions as part of its review for conformance with Regulatory Guide 1.97. This further staff review for Regulatory Guide 1.97 conformance may result in the licensee being required to include additional equipment in its environmental qualification program. However, the licensee has included in its environmental qualification program certain post-accident monitoring equipment using the guidance of Regulatory Guide 1.97.

We find the licensee's approach to identifying equipment within the scope of paragraph (b)(3) of 10 CFR 50.49 acceptable since it is in accordance with the requirements of that paragraph.

Justification for Continued Operation

The licensee has provided, in its June 4, July 24 and September 26, 1984 and March 4, 1985 submittals, justification for continued operation addressing each item of equipment for which the environmental qualification is not yet completed (see enclosure for the JCO equipment list).

We have reviewed each JCO provided by the licensee in the above submittals and find them acceptable since they are based on essentially the same criteria that were used by the staff and its contractor to review JCO's previously submitted by licensees. These criteria, listed below, are also essentially the same as those contained in 10 CFR 50.49(i).

a. The safety function can be accomplished by some other designated equipment that is qualified, and failure of the principal equipment as a result of the harsh environment will not degrade other safety functions or mislead the operator.

b. Partial test data that does not demonstrate full qualification, but provides a basis for concluding the equipment will perform its function. If it can not be concluded from the available data that

the equipment will not fail after completion of its safety function, then that failure must not result in significant degradation of any safety function or provide misleading information to the operator.

c. Limited use of administrative controls over equipment that has not been demonstrated to be fully qualified. For any equipment assumed to fail as a result of the accident environment, that failure must not result in significant degradation of any safety function or provide misleading information to the operator.

CONCLUSIONS

Based on the above evaluation, we conclude the following with regard to the qualification of electric equipment important to safety within the scope of 10 CFR 50.49.

- Georgia Power's electrical equipment environmental qualification program complies with the requirements of 10 CFR 50.49.

- The proposed resolutions for each of the environmental qualification deficiencies identified in the March 31, 1983 SERs and enclosed FRC TERs and in the staff's April 4, 1985 letter to the licensee are acceptable.

- Continued operation until completion of the licensee's environmental qualification program will not present undue risk to the public health and safety.

ENCLOSURE

JUSTIFICATION FOR CONTINUED OPERATION EQUIPMENT LIST

FOR HATCH UNIT 1

GPC PLANT ID. NO.	FRC TER ITEM NUMBER	EQUIPMENT TYPE	EQUIPMENT MANUFACTURER/MODEL NO.
B21-MOV F019	3	Motor Operated Valve	Limitorque SMB, DC Service, Class B Insul.
E11-MOV F004D	24	Motor Operated Valve	Limitorque SMB, AC Service, Class B Insul.
E11-MOV F075A	23	Motor Operated Valve	Limitorque SMB, AC Service, Class B Insul.
E11-MOV F008	178	Motor Operated Valve	Limitorque SMB, DC Service, Class B Insul.
E11-MOV F009	14	Motor Operated Valve	Limitorque SMB, AC Service, Class H Insul.
E11-MOV F021A,B	19	Motor Operated Valve	Limitorque SMB, AC Service, Class B Insul.
E21-MOV F004A,B	15	Motor Operated Valve	Limitorque SMB, AC Service, Class B Insul.
E21-MOV F005A,B	15	Motor Operated Valve	Limitorque SMB, AC Service, Class B Insul.
E11-MOV F022	13	Motor Operated Valve	Limitorque SMB, AC Service, Class H Insul.
E41-MOV F001	21	Motor Operated Valve	Limitorque SMB, DC Service, Class B Insul.
E41-MOV F003	2	Motor Operated Valve	Limitorque SMB, DC Service, Class B Insul.
E41-MOV F006	N/A	Motor Operated Valve	Limitorque SMB, DC Service, Class B Insul.
E41-MOV F041	16	Motor Operated Valve	Limitorque SMB, DC Service, Class B Insul.
E41-MOV F007	N/A	Motor Operated Valve	Limitorque SMB, DC Service, Class B Insul.
E51-MOV F008	16	Motor Operated Valve	Limitorque SMB, DC Service, Class B Insul.
E51-MOV F031	6	Motor Operated Valve	Limitorque SMB, DC Service, Class B Insul.
G31-MOV F001	13	Motor Operated Valve	Limitorque SMB, AC Service, Class B Insul.
G31-MOV F004	16	Motor Operated Valve	Limitorque SMB, DC Service, Class B Insul.
P33-P001A,B	99	Pri. Cont. Atm H_2 & O_2 Analyzer	Hayes E632II O_2 & SH643D H_2 Analyzers
R11-S039,40	101	Transformer	Sorgel Model 101023-5
R24-S011, 12 Panelboard	97	Panelboard	Westinghouse WEHB CKT BKR EHB
P52-MOV F875	3	Motor Operated Valve	Limitorque SMB, AC Service, Class B Insul.
P52-PIS N021	N/A	Press. Ind. Switch	Ashcroft 1377TA

GPC PLANT ID. NO.	FRC TER ITEM NUMBER	EQUIPMENT TYPE	EQUIPMENT MANUFACTURER/MODEL NO.
T41-TIS N019 A,B	71	Temp. Ind. Switch	Honeywell T654A1560
T41-TIS N020 A,B	71	Temp. Ind. Switch	Honeywell T654A1560
T41-TIS N021 A,B	71	Temp. Ind. Switch	Honeywell T654A1560
T46-DPT N005 B,C	181	Diff. Press. Xmtr.	Rosemount 1151DP3B22LMMB
T47-TE N003,9	124	Temperature Element	Rosemount 10414591
T48-E/S K001	120	Power Supply	FGeneral Electric 570062FAAC1
T48-PT N001	112	Press. Xmtr.	GE/MAC Model 551
T48-TE N009 A,B,D	122	Temperature Element	Rosemount 104-1460-1
T48-TE N009C	123	Temperature Element	Rosemount 104AGP-4
T48-FIT N014 A,B	119	Flow Indicating Xmtr.	Brooks 3611
T48-HOV F112 A,B	98	Hydraulic Operated Valve	Fisher Controls 350
T48-E/S K011 ,B	118	Power Supply	Brooks 5523DX
T48-LT N021 A,B	N/A	Diff. Press. Xmtr.	Rosemount 1153DB3PA
T48-DPS N210,11	85	Diff. Press. Switch	Barksdale DPD 2TA3
B21-DPIS N006 A,B,C,D	76	Diff. Press. Ind. Switch	Barton 288
B21-DPIS N007 A,B,C,D,	76	Diff. Press. Ind. Switch	Barton 288
B21-DPIS N008 A,B,C,D	76	Diff. Press. Ind. Switch	Barton 288
B21-DPIS N009 A,B,C,D	76	Diff. Press. Ind. Switch	Barton 288
B21-TS N010 A,B,C,D	125	Temperature Switch	Fenwall 17002-40
B21-TS N011 A,B,C,D	125	Temperature Switch	Fenwall 17002-40
B21-TS N012 A,B,C,D	125	Temperature Switch	Fenwall 17002-40
B21-TS N013 A,B,C,D	125	Temperature Switch	Fenwall 17002-40
321-LIS N017 A,B,C,D	80	Level Ind. Switch	Barton 288A
B21-PS N021 B,C	76	Press. Switch	Barton 288
B21-PS N021 A,D,E,F	81	Press. Switch	Barksdale B2TM12SS
B21-LITS N026 A,B	78	Level Ind. Xmtr. Switch	Yarway 4418CE
B21-LIS N024 A,B	78	Level Ind. Switch	Yarway 4418C
B21-LIS N025 A,B	78	Level Ind. Switch	Yarway 4418C
B21-LIS N027	109	Level Xmtr.	GE/MAC 555111BDAA3PDF

GPC PLANT ID. NO.	FRC TER ITEM NUMBER	EQUIPMENT TYPE	EQUIPMENT MANUFACTURER/MODEL NO.
B21-LIS N031 A,B,C,D	78	Level Ind. Switch	Yarway 4418C
B21-LITS N036,37	78	Level Ind. Xmtr. Switch	Yarway 4418CE
B21-LIS N042A,B	78	Level Ind. Switch	Yarway 4418C
B31-MOV F031A,B	10	Motor Operated Valve	Limitorque SMB3, AC Service Class H Insul.
C32-PT N005A,B	108	Press. Xmtr.	GE/MAC 551032GKZZ2556
C71-PS N002A,B,C,D	73	Press. Switch	Static-O-Ring 12NBB4NX
E11-DPT N002A,B	114	Diff. Press. Xmtr.	Rosemount 1151DP7B22MB
E11-PS N010A,B,C,D	77	Press. Switch	Static-O-Ring 12NAA5X9TT
E11-PS N011A,B,C,D	77	Press. Switch	Static-O-Ring 12NAA5X9TT
E11-FT N015A,B	107	Flow Xmtr.	Barton 368
E11-PS N016A,B,C,D	75	Press. Switch	Static O-Ring 5NAA3X10SITT
E11-PS N020A,B,C,D	75	Press. Switch	Static O-Ring 5NAA3X10SITT
E11-DPIS N021A,B	79	Diff. Press. Ind. Switch	Barton 289
E21-FT N003A,B	110	Flow Xmtr.	Bailey Meter 555111BDAA43PDF
E21-FIS N006A,B	79	Flow Ind. Switch	Barton 289
E21-PS N008A,B	75	Press. Switch	Static-O-Ring 5NAA3X10SITT
E21-PS N009A,B	82	Press. Switch	Barksdale B2TM12SS
E41-MOV F011	21	Motor Operated Valve	Limitorque SMB, DC Service, Class B Insul.
E41-MOV F012	21	Motor Operated Valve	Limitorque SMB, DC Service, Class B Insul.
E41-PS N001A,B,C,D	82	Press. Switch	Barksdale B2TM12SS
E41-PS N004,5	74	Press. Switch	Barton 288
E41-FS N006	79	Flow Switch	Barton 289
E41-FT N008	110	Flow Xmtr.	Bailey Meter 555111BDAA4WAL
E41-PS N010	72	Press. Switch	Static-O-Ring 6NAA21X10SITT
E41-PS N012A,B,C,D	72	Press. Switch	Static-O-Ring 6NAA21X10SITT
E41-PS N017A,B	72	Press. Switch	Static-O-Ring 5NAA3X10SITT
E41-LS N015A,B	83	Level Switch	Robertshaw 83842A2
E41-PS N027	82	Press. Switch	Barksdale B2TM12SS
E41-TE N030A,B	126	Temperature Element	PYCO N145C3224P1
E41-TE N046A,B	126	Temperature Element	PYCO N145C3224P1

GPC PLANT ID. NO.	FRC TER ITEM NUMBER	EQUIPMENT TYPE	EQUIPMENT MANUFACTURER/MODEL NO.
E51-TE N026B,D	126	Temperature Element	PYCO N145C3224P1
E51-TE N026A,C	129	Temperature Element	PYCO N145C3224P1
E51-TE N025A,B,C,D	127	Temperature Element	PYCO N145C3224P1
E51-TE N027A,B,C,D	128	Temperature Element	PYCO N145C3224P1
E51-TE N023A,B	129	Temperature Element	PYCO N145C3224P1
E51-PS N012A,B,C,D	86	Press. Switch	PYCO N145C3224P1
E51-DPIS N017,18	76	Diff. Press. Ind. Switch	Barton 288
E51-PS N019A,B,C,D	82	Press. Switch	Barksdale B2TM12SS
G31-TE N016A,B,D,E,F	128	Temperature Element	PYCO N145C3224P1
G31-TE N022A,B,C,D,E,F	128	Temperature Element	PYCO N145C3224P1
G31-TE N023A,B,C,D,E,F	128	Temperature Element	PYCO N145C3224P1
F31-TE N016C,F	N/A	Temperature Element	PYCO N145C3224P1
G31-FT N012,36,41	115	Flow Xmtr.	GE/MAC 555111BCAA4WAK
N1-4, H1-16	155	PVC Cable	Okonite 600V PVC
H1-16	154	PVC Cable	Okonite 600V PVC
J2-03, J2-04	145	PVC Cable	Okonite RG59B/U
N3-04	148	PVC Cable	Boston Insulated Wire 4/C #16 AWG
M5-20	N/A	PVC Cable	Okonite 5/C #20 AWG
E41-C002 (LS4)	N/A	Limit Switch	NAMCO D200G-ST-2
E41-C002 (SV1)	N/A	Solenoid Valve	Unknown
N3-19	N/A	PVC Jacketed Cable	Unknown
N3-03	N/A	PVC Jacketed Cable	Unknown

JUSTIFICATION FOR CONTINUED OPERATION EQUIPMENT LIST

FOR HATCH UNIT 2

GPC PLANT ID. NO.	NUMBER	EQUIPMENT TYPE	EQUIPMENT MANUFACTURER/MODEL NO.
2E11-MOV F021A	25	Motor Operated Valve	Limitorque SMB, AC Service, Class B Insul.
2E11-MOV F016A	25	Motor Operated Valve	Limitorque SMB, AC Service, Class B Insul.
2E11-MOV F016B	5	Motor Operated Valve	Limitorque SMB, AC Service, Class B Insul.
2E11-MOV F021B	21	Motor Operated Valve	Limitorque SMB, AC Service, Class F Insul.
2P33-P001A,B	N/A	Pri. Cont. Atm. H_2 & O_2 Analyzer	Comsip Delphi Mark K IV/Thermon Heat Trace
		Terminal Blocks	Buchanan