894

RELATED CORRESPONDENCE

The Light company Houston Lighting & Power P.O. Box 1700 Houston, Texas 77001 (713) 228-9211

October 21, 1985
ST-HL-AE-1386
File No.: G9.17

Mr. George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

DOCKETED
OCT 24 1985
DOCKETING & SERVICE BRANCH
SECY-NRC

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Responses to DSER/FSAR Items

Dear Mr. Knighton:

The attachments enclosed provide STP's response to Draft Safety Evaluation Report (DSER) or Final Safety Analysis Report (FSAR) items.

The item numbers listed below correspond to those assigned on STP's internal list of items for completion which includes open and confirmatory DSER items, STP FSAR open items and open NRC questions. This list was given to your Mr. N. Prasad Kadambi on October 8, 1985 by our Mr. M. E. Powell.

The attachments include mark-ups of FSAR pages which will be incorporated in a future FSAR amendment unless otherwise noted below.

The items which are attached to this letter are:

Attachment	Item No.*	Subject
1	Q410.04, 40.38, 211.21, 211.38, 440.78, 10.27, 311.03, 222.8, 440.44	Various FSAR Sections
2	Q430.120	Motor-operated Valves

* Legend
D - DSER Open Item
F - FSAR Open Item
C - DSER Confirmatory Item
Q - FSAR Question Response Item

L1/DSER/a

Attachment	Item No.*	Subject
3	D 0.7-3	DG Loading Table

If you should have any questions concerning this matter, please contact Mr. Powell at (713) 993-1328.

Very truly yours,

M. R. Wisenburg
Manager, Nuclear Licensing

JSP/bl

Attachments: See above

* Legend
D - DSER Open Item
F - FSAR Open Item
C - DSER Confirmatory Item
Q - FSAR Question Response Item

L1/DSER/a

cc:

Hugh L. Thompson, Jr., Director
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Robert D. Martin
Regional Administrator, Region IV
Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

N. Prasad Kadambi, Project Manager
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, MD 20814

Claude E. Johnson
Senior Resident Inspector/STP
c/o U.S. Nuclear Regulatory Commission
P.O. Box 910
Bay City, TX 77414

M.D. Schwarz, Jr., Esquire
Baker & Botts
One Shell Plaza
Houston, TX 77002

J.R. Newman, Esquire
Newman & Holtzinger, P.C.
1615 L Street, N.W.
Washington, DC 20036

Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

E.R. Brooks/R.L. Range
Central Power & Light Company
P.O. Box 2121
Corpus Christi, TX 78403

H.L. Peterson/G. Pokorny
City of Austin
P.O. Box 1088
Austin, TX 78767

J.B. Poston/A. vonRosenberg
City Public Service Board
P.O. Box 1771
San Antonio, TX 78296

Brian E. Berwick, Esquire
Assistant Attorney General for the State of Texas
P.O. Box 12548, Capitol Station
Austin, TX 78711

Lanny A. Sinkin
3022 Porter Street, N.W. #304
Washington, DC 20008

Oreste R. Pirfo, Esquire
Hearing Attorney
Office of the Executive Legal Director
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Charles Bechhoefer, Esquire
Chairman, Atomic Safety & Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. James C. Lamb, III
313 Woodhaven Road
Chapel Hill, NC 27514

Judge Frederick J. Shon
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Ray Goldstein, Esquire
1001 Vaughn Building
807 Brazos
Austin, TX 78701

Citizens for Equitable Utilities, Inc.
c/o Ms. Peggy Buchorn
Route 1, Box 1684
Brazoria, TX 77422

Docketing & Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555
(3 Copies)

Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
1717 H Street
Washington, DC 20555

Revised 9/25/85

Attachment 1

ATTACHMENT I
ST-HL-AE- 1386
PAGE 1 OF 12

Question 010.27

Section 9.4.2 and Figure 9.4.2-1 indicate that the Fuel Handling Building Supply Air Subsystem is not designed to Seismic Category I requirements and that there are no isolation dampers provided at the outside air intake duct. It is our position that you provide redundant Seismic Category I isolation dampers for the Seismic Category I portion of the outside air intake duct to isolate the fuel building to prevent an uncontrolled release under a postulated fuel-handling accident condition. Modify your design accordingly.

Response

The FHB Exhaust System is provided with HEPA and carbon filters and is required to operate under all modes of operation.

~~The FHB Supply Air Subsystem is a non-safety-related system and the dampers in the inlet are designed to fail in the open position.~~ The ~~dampers~~ two relief dampers on the seismic portion of the FHB intake are required to be open in order for make-up air to enter the building. Since the building will be at a negative pressure (Section 9.4.2.1), there is no possibility of an uncontrolled release of building air through the FHB Supply Air Subsystem.

The FHB Supply Air Subsystem is Seismic Category I up to the inlet damper of the filter units as shown on Figure 9.4.2-1.

ATTACHMENT 1
ST-HL-AE- 1386
PAGE 2 OF 12

Question 032.04

Describe the conformance to the guidance of Regulatory Guide 1.100 in seismic qualification of Class 1E equipment in your FSAR Section 3.10. Justify and exception taken.

Response

As discussed in Section 3.10, Class 1E Equipment seismic qualification meets the intent of IEEE Std 344-1975. 38

Qualification test results of NSSS equipment will be available in WCAP-8587, Revision 1, Supplement 1.

Seismic qualification procedures and criteria for non-NSSS equipment are as specified in IEEE Std 344-1975. A synopsis of these procedures and criteria are given in Sections 3.10.1 and 3.10.2. In general, however, seismic qualification procedures for non-NSSS Class 1E equipment meet the intent of Regulatory Guide 1.100. The following describes the STP position in relation to Regulatory Guide 1.100.

Regulatory Position C.1 - In the seismic analysis of cable trays, a static coefficient of 1.0 is utilized because the higher modes are in the rigid region (frequency greater than 33 Hz). A justification is provided by the supplier for equipment qualified by using this method.

Regulatory Position C.2 - Qualification procedures for STP are in conformance with this regulatory position.

Regulatory Position C.3 - Qualification procedures for STP are in conformance with this regulatory position.

Regulatory Position C.4 - STP meets the intent of this position in that any equipment malfunctions are documented in the seismic qualification test report.

Qualification of NSSS equipment is ~~as~~ discussed in Section 3.10N.

ATTACHMENT 7
ST-HL-AE-1386
PAGE 3 OF 12

Question 040.38

Provide additional description (with the aid of drawings) of the turbine bypass valves and associated controls. In your discussion include the principle of operation, construction and set points, and the malfunctions and/or modes or failure considered in the design of the turbine bypass system. (SRP 10.4.4, Part III, Item 1).

Response

The turbine bypass valves are ASME Section III class 2 class 900, size 8 X 6 body and design temperature 600°F. The required air pressure to initiate travel is 19 psig with a 1300 psi ΔP across the valve set. The valve is to be mounted in horizontal piping run, with the stem in a vertical position and the operator above valve centerline. Principals of operation are discussed in Sections: 7.7.1.1, 7.7.1.4, 7.7.1.8, 7.7.1.8.1, 7.7.1.8.2, 7.7.1.8.3, 7.7.2.1, 7.7.2.3, 7.7.2.5, and 7.7.2.6. The failure modes are discussed in revised FSAR Section 10.4.4

~~The set points will be provided in the Technical Specification's Table 2.2-1 and interlocks Table 7.7-1.~~ 31

A description of the interlocks can be found in Table 7.7-1.

STP FSAR

Question 211.21

Identify all ECCS LOCA related instruments, valves and valve motors which are expected to be flooded following a postulated LOCA.

Response

~~There are no ECCS LOCA related instruments, valves or valve motors which are expected to be flooded following a LOCA.~~

The internal Flooding analysis will be complete the Fourth Quarter of 1985. Upon completion a response will be provided.

ATTACHMENT 1
ST-HL-AE-1386
PAGE 5 OF 12

Question 211.38

Provide the information concerning accumulator water volume and pressure values used in LOCA analysis. What are the volumes assumed in the LOCA analysis and the criterion for determining them.

Response

Accumulator Nominal Water Volume = ~~1200~~ 1580 ft^3/accumulator

Pressure = 600 psia

Accumulator pressure is set by Technical Specifications to be the minimum expected accumulator pressure.

The accumulator water volume is set by the Technical Specifications to insure that the downcomer will be full at the time when the accumulator empties.

ATTACHMENT 1
ST-HL-AE- 1386
PAGE 6 OF 12

Question 410.04 (3.5.2)

Provide the result of an analysis which shows that the diesel generator exhausts on the side of the building at elevation 65 ft. 8 in. above plant grace are not subject to the large missiles of SRP 3.5.1.4 (utility pole); i.e., there is no elevation 35 feet or higher within 1/2 mile of the plant. Furthermore if blockage of exhaust opening by smaller size missiles such as 4 x 12 plank would prevent diesels from starting provide protection for the exhaust or perform a PRA to demonstrate that the probability of significant damage to the diesel generator exhaust piping due to tornado missiles causing a release of radioactivity in excess of 10 CFR Part 100 limits shall be less than or equal to a median valve (realistic) 10^{-7} per year or a mean valve (conservative) of 10^{-6} per year. The loss of offsite power should be assumed in the PRA.

Response

~~The diesel generator exhausts are currently under reevaluation. A response will be provided during the Third Quarter of 1985.~~

Figure 1.2-10 provides a drawing showing the layout and location of the DG exhaust. The tornado missiles considered at STP can be found in Table 3.5-9. As noted in this table the automobile and utility pole are only assumed up to an elevation of 30' above grade. A review of Figure 1.2-10 shows the intakes to be greater than 30' above the grade elevation. Thus utility poles and automobile missiles need not be considered.

To preclude damage of the external portion of the exhaust a breakaway design is employed. This will allow the external exhaust piping to break off flush with the DG building wall. thus allowing continued operation of the diesel generator. With an alowable blockage of up to 40% of the diesel exhaust (OD 30") it is not considered credible that the missiles described in Table 3.5-9 could cause sufficient blockage to adversely affect the DG. operation.

Question 440.44N

Figure 6.3-1 through 6.3-4 indicate a number of low pressure non-safety grade lines that are separated from the ECCS safety grade lines by only one valve, e.g., the SI jockey pump return line is separated from the LHSI pump discharge line by one safety grade check valve, the test lines are separated from the SI pump discharge lines by only one fail closed air operated valve, and the drain lines are only separated from the safety grade ECCS piping by single manual valves, most but not all of which are locked closed. We are concerned that valve failure or erroneous operator action could cause ECCS flow to be diverted to these lines. Provide a list of all non-safety grade lines that are connected to the ECCS, including the portions of the RHRs that are utilized for ECCS purposes, and describe the adequacy of their design regarding separation. In particular, SRP Section 6.3 states that long term decay heat removal should be provided assuming a single passive failure. Show that a failure of the single check valve off of the SI jockey pump discharge line or active failures of other valves will not result in a violation of the long term cooling requirement.

Response

The requested list of all non-safety grade lines connected to the Emergency Core Cooling System (ECCS) is provided herein under Tables Q440.44N-1 and Q440.44N-2.

The safety injection (SI) jockey pumps have been deleted from the design. Section 6.3.2.2, Figures 6.3-1 through 6.3-4, and Figure 5.4-6 ~~will be~~ have been revised to reflect this change.

Table Q440.44N-1 lists the nonsafety-grade lines inside the containment connected to the ECCS. Safety Injection System (SIS) test lines and accumulator nitrogen supply lines are the only two lines where single valves are provided with operators. The SIS test lines are designed for full Reactor Coolant System (RCS) pressure up to and including the containment isolation valves. Leakage through one of the valves in the test line or nitrogen supply line would be very small and would be stopped by the containment isolation valves if the nonsafety grade portion of the line remained intact, or would leak into the containment if the nonsafety-grade pipe had failed. Neither case would affect the long term cooling capability of the system or water inventory. The vent and drain valves are manual, normally closed valves which would not be opened in a post Loss-of-Coolant-Accident (LOCA) environment. A passive failure in any of the connections listed under Table Q440.44N-1 would cause a very small leakage directly into the containment and would not affect the water inventory or long term cooling capability of the system.

The nonsafety lines outside the containment, connected to the ECCS, are listed in Table Q440.44N-2. As listed in the table, the vents, drain, and test connections are provided with manual, normally closed valves plus a threaded

Response (Continued)

pipe cap. The vent and drain lines which may contain recirculation fluid ~~will be~~ are provided with a ESF locked closed valve. If a ESF passive failure is assumed in one of the connections listed in Table Q440.44N-2 it would cause a small amount of leakage into the ~~SI~~ pump cubicle sumps. The safety-related instrumentation provided in the Fuel-Handling Building (FHB) ~~SI~~ pump cubicle sump will alarm and appropriate operator action can be taken to isolate any leakage. Failure of locked closed manual valves is not postulated, thus the quantity of ECCS fluid lost outside the containment will not be substantial enough to affect the ECCS performance.

It should be noted that the SI and containment spray systems ~~is~~ are provided with three independent trains. The three trains consist of an accumulator, ~~and~~ high-head safety injection (HHSI), low-head safety injection (LHSI), and a containment spray pump. Any two trains provide adequate capacity and will be available in the case of a single failure in the third train.

ATTACHMENT 1
ST-HL-AE-1386
PAGE 9 OF 12

TABLE Q440.44N-2

Non-Safety Grade Lines Connected to the ECCS Outside Containment

Number Per Train	Service Description	Size	Isolation Provided
2	SI pumps miniflow	2"	Two MOVs
1	CSS test line	6"	Locked closed manual valve
4	Containment penetration test connections	1"	Locked closed manual valve plus threaded pipe cap
Various	Local vents, drains, and test connections	1-3/4"	Locked closed manual valve plus threaded pipe cap
1 (Total)	RWST drain	2"	Locked closed manual valve
1 (Total)	RWST local sample	3/4"	Closed manual valve plus threaded* pipe cap
1	SIS pump suction header ~~PSVs~~ Pressure Relief	3/4"	Code safety Relief Valve
4	Lines piped to CS and SIS pump sump	2"	Locked closed manual valve
1	SI sample	3/4"	Locked closed manual valve

~~*These will be changed to locked closed.~~

Question 440.78

With regard to switchover from injection to recirculation, how much time does the operator have to close the motor operated RWST isolation valve before pump NPSH is lost, assuming failure of the check valve in the RWST discharge line and the containment pressure shown in FSAR Figure 6.2.1.1-4 at time of switchover? In this time period compatible with the recommendations of ANSI N660 (draft)?

Response :

As discussed in the response to question 211.5, the active failure (to close) of a check valve is not considered a credible event.

2057

ATTACHMENT 1
ST-HL-AE-1386
PAGE 11 OF 12

Question 311.03N

Section 2.2.1.4.1 refers to four roads (Fig. 2.1-5) that are located within five miles of the site. Except for FM-521, these roads are not very evident and the information about them is sketchy. To clarify the situation please provide the following information:

1. A map or drawing of the area which clearly shows the roads in relation to the plant.

2. The closest major highway in the area near the site.

3. The specific designation or classification of each road.

4. The types and quantities of hazardous material transported over these roads, points of origin and destination if available, and the hazard they may present to the safety structures at the plant if an accident should occur.

Response

~~FSAR~~ section 2.2.1.4.1 has been revised to respond to question 311.3 parts 1, 2, and 3. ~~Part 4 will be addressed in an amendment to our FSAR by December 31, 1984.~~

For further information see letter ST-HL-AE-853.

Section 2.2.3.1.2 provides an evaluation of potential accidents from transporting hazardous material over these roads.

Question 222.8

Describe any difference between the feedline break analysis methods and results reported in WCAP-9230, "Report on the Consequences of a Postulated Main Feedline Rupture," with those reported in the present FSAR.

Response

The only differences between the methods of analysis and results reported in WCAP-9230 and those utilized in the STP FSAR are as follows:

1. Credit was taken for ~~high head~~ charging or high head safety injection (HHSI) pumps (shutoff head approximately 2700 psia) in the results of the feedline rupture in WCAP-9230. Since the ~~charging pumps~~ high head safety injection (HHSI) pumps on STP have a shutoff head of approximately 1600 psia, no credit is taken for safety injection flow in the feedline rupture analysis.

2. The sensitivity study presented in WCAP-9230 showed that the transient behavior following a feedline rupture was more severe if the pressurizer power-operated relief valves (PORV) were not assumed to be operable. However, since STP does not have high head charging pumps (shutoff head approximately 2700 psia), a sensitivity study was conducted for the STP FSAR that showed that the results of the feedline rupture were more severe with PORV's operable.

   Thus, the STP FSAR feedline rupture was presented with the PORV's in automatic control.

3. All other sensitivity results presented in WCAP-9230 were found to be applicable to the STP FSAR feedline rupture analysis.

Attachment 2

430.120
(SRP 8.3.1)

Recent experience with nuclear power plant Class 1E motor-operated valve motors has shown that in some instances the motor winding on the valve operator could fail when the valve is subjected to frequent cycling. This is primarily due to the limited duty cycle of the motor. Provide the required duty cycle of the following valves as it relates to system mode of operation in various events:

1. Steam supply valve to AFW pump turbine (if they are MOVS)
2. Auxiliary feedwater flow control valves
3. RHR heat exchanger valves
4. SI injection valves
5. SI discharge valves
6. Atmospheric dump valves (if they are MOVS)

Demonstrate that the availability of the safety systems in the South Texas design will not be compromised due to the limited duty cycle of the valve operator motors.

see attached

Response:

The following responses correspond to the above valve applications:

1. Steam Supply Valve to AFW Pump Turbine

The steam supply valve, MS0143 (shown on Figure 10.4.9-1), to the auxiliary feedwater pump turbine is a dc motor-operated valve. It is qualified for 5000 cycles (open-close-open) over the 40-year life of the plant. This valve is normally closed and receives an AFW initiation signal (see Section 7.3) to open. Except for periodic testing, the valve remains closed. In the event of an incident requiring AFW initiation, the valve would be opened and remain open until operator action to close it, e.g. to effect isolation in the event of a steam generator tube rupture.

Valve XMS0514 is the turbine trip and throttle valve for the AFW pump turbine, and is also shown on Figure 10.4.9-1. It is a dc motor-operated valve, qualified for 1460 cycles over the 40-year life of the plant. This valve is normally open, receiving a confirmatory AFW initiation signal to open during an incident requiring AFW initiation. Except for periodic testing, the valve remains open and is closed only to provide redundant isolation to valve MS0143 discussed above.

2. AFW Flow Control Valves

The AFW regulator valves, FV-7523, FV-7524 and FV-7525, are ac motor-operated valves. The AFW regulator valve in the steam-driven train, FV-7526, is a dc motor-operated valve. These valves are shown on Figure 10.4.9-1.

Except for periodic testing, these valves are controlled by the Qualified Display Processing System (described in Section 7.5.6) based upon the flowrate in the AFW train. Considering the pressure in the steam generator during the most limiting incident, the AFW regulator valves are jogged 10 full or partial strokes within the first 10 minutes after AFW initiation. The valves will be qualified for this conservative duty cycle. Since this is the most stringent duty requirement, these valves will be modulated less frequently than the cycling rate for which they are qualified.

3. RHR Heat Exchanger Valves

The RHR heat exchanger valves are air-operated and are not required to perform a safety function. Before returning to power, the operator positions the valves so that all flow is sent through the heat exchangers. Thus no valve repositioning is required to respond to an incident.

4. SI Injection Valves

The safety injection valves are ac motor-operated gate valves and are qualified for 2000 cycles over the 40-year plant life.

5. SI Discharge Valves

The safety injection discharge valves are ac motor-operated gate valves and are qualified for 2000 cycles over the 40-year plant life.

6. Atmospheric Steam Dump Valves

The steam generator power-operated relief valves are electro-hydraulically actuated valves, not motor-operated. The turbine bypass valves are air-operated valves.

There are no motor-operated valves in the Emergency Core Cooling System which are required to be repetitively stroked during normal or emergency modes of operation.

The above indicated numbers of cycles are the numbers of cycles the valve is qualified for over the 40 year life of the plant. If the valve's qualified life is shorter than 40 years, it is qualified for the number of cycles needed during its qualified life. Thus, a valve qualified for 2000 cycles over 40 years, but having a qualified life of 5 years, is qualified for 1/8 of 2000 cycles, or 250 cycles.

Based upon the above information, the duty cycles of these motor-operated valves are adequate for normal operation, required periodic surveillance testing and emergency operation. The availability of safety systems in the South Texas design will not be compromised due to limited duty cycles of valve operator motors.

Attachment 3

All circuit breakers are of the magnetic, air-interruption type with interrupting ratings consistent with the short-circuit duty at the point of application. All circuit breakers are electrically operated with 125 vdc control power. The bus tie breakers are normally open and are closed to allow power to selected loads on both bus sections under administrative control should one of the power sources to the switchgear be disabled. 36

Feeders from this 480 V switchgear supply power to ESF motors with ratings in the range of 150 hp to 300 hp. Other 480 V feeders supply power to Class 1E MCCs from which all 460 V motors with ratings equal to or less than 100 hp are controlled.

8.3.1.1.4.1.1 Non-Class 1E Loads Connected to Class-1E Power System: The non-Class 1E loads that can be powered from the standby Diesel Generators (SBDGs) during loss of offsite power are included in Table 8.3-3 and include: 32

1. Pressurizer Heaters

2. Control Rod Drive Mechanism (CRDM) Cooling Fans

3. Reactor Cavity Vent Fans, and 38

4. Reactor Support Exhaust Fan

A redundant set of pressurizer heaters are connected to 480 V ESF load centers E1A (Train A) and E1C (Train C). As indicated in Table 8.3-3 these heaters are manually loaded during loss-of-offsite-power (LOOP) when a SI signal is not present. 36 Q430.11N Q430.30N

The balance of the non-Class 1E loads indicated above (See detailed listing in Table 8.3-3) are connected to common MCCs. As shown in Figure 8.3-1, these non-Class 1E MCCs, one per train, are connected to Class 1E 480 V MCCs. These MCC breakers are tripped upon receipt of a SI signal and therefore are classified as isolation devices (see Section 8.3.1.4.4.14). As indicated on Table 8.3-3, these loads are either sequenced or manually loaded onto the standby DGs during a LOOP when a SI signal is not present. In the event sequencing is initiated by a SI signal, these loads may be manually loaded after resetting the SI signal.

8.3.1.1.4.2 Equipment Capacities and Loading Basis - Each SBDG has a continuous 8,760-hour rating of 5,500 kW. The loads are listed in Table 8.3-3. The design and continuous rating selected is consistent with the requirements of Regulatory Guide (RG) 1.9 and IEEE Standard 387-1972. Capacities of individual loads are determined on the basis of motor ~~nameplate~~ brake horsepower ratings. The diesel engine, generator, and accessories are briefly described in the following: 36 36 24 Q430.13N

1. The DG set, manufactured by Cooper Energy Services, has the following ratings: 2000-hour at 5935 kW, 168-hour at 6050 kW, and 30-minute at 6050 kW. These ratings are based on a cooling water inlet temperature of 115°F. 36 49

ATTACHMENT 3
ST-HL-AE-1386
PAGE 2 OF 26

8.3.1.1.4.7 <u>Testing of Onsite Standby Power System Equipment</u> - Provisions are made for periodic testing of the Onsite Standby Power System equipment in compliance with RG 1.22, IEEE 338-1977 and BTP PSB 2. 290 430. 33N 450 430. 33N

Each standby DG is subjected to standard factory tests and inspections prior to shipment to the site. In addition, prior to startup of the plant, each standby DG is subjected to the field acceptance tests of starting, load acceptance with design load, full load rejection, etc., in accordance with IEEE 387-1972 and RG 1.108. 290 430. 33N 36

The ability to restart a DG by a "fast start" signal subsequent to normal shutdown of the DG is verified by functional and starting tests prior to startup of the plant.

The objectives and requirements of the above tests are detailed in IEEE 387-1972 and RG 1.108. Periodic testing of the standby DGs is conducted to verify their availability and capability to perform their safety functions as follows: 290 430. 33N 36

1. Tests are performed to verify that each standby DG can be started manually and automatically, synchronized, and loaded to nameplate rating when connected in parallel with the normal power source. Each standby DG is operated under these conditions for one hour which is sufficiently long to demonstrate the ability of the equipment to perform its safety function. 36

   During testing, if an SI actuation signal occurs while the standby diesel generator is paralleled to the normal power source the SI actuation signal takes precedence, and the standby DG feeder breaker is automatically tripped by a signal directly from the SI Actuation System. The 4.16 kV ESF bus supply breaker remains closed, and the ESF loads are connected to the 4.16 kV ESF bus by the ESF load sequencer per the design, as described in Section 8.3.1.1.4.4. 36

   The standby DG continues to run, its governor is automatically transferred to the isochronous mode, and its voltage regulator is put in the automatic mode, thereby enabling it to respond automatically to an emergency signal without the need for any operator action. Under these conditions, all non-critical protective devices are bypassed, as described in Section 8.3.1.1.4.6. 36

   If a non-critical trip occurs during testing, the standby DG trips. Upon a subsequent SI actuation signal, the standby DG starts up automatically and runs with its governor in the isochronous mode with the non-critical protective devices bypassed. 36

   replace by INSERT A

   ~~If the offsite power source is lost while in parallel with the standby DG during testing, the standby DG feeder breaker trips automatically on overcurrent. Upon detection of undervoltage on the 4.16 kV ESF bus, Mode II is initiated by the ESF load sequencer, as described in Section 8.3.1.1.4.4.2.~~ 36

   When the local control position is selected at the standby DG local control panel to perform maintenance and testing, a standby DG "Local Position" alarm is annunciated in the main control room. 36

Insert A

In the event the DG is operating in parallel with the offsite power source (under test conditions), and the offsite power is lost, the DG feeder breaker will automatically trip on underfrequency due to overloading. The bus will then experience an undervoltage condition (same as loss of offsite power) and the bus feeder breaker will automatically trip.

Whether the standby DG had been operating in parallel with the offsite power source or operating but not connected to the bus, upon detection of undervoltage on the 4.16 kV ESF bus, Mode II is initiated by the ESF load sequencer, as described in Section 8.3.1.1.4.4.2. The load sequencing has been arranged such that adequate time is provided between the 480V load center breaker closure (allowing time for closing spring charging) in step 2 and the next significant load (centrifugal charging pumps) in Step 4.
required during loss of offsite power.

Replace Table 8.3-3
with attached Table

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 1 (0 Second After Diesel Generator Breaker Is Closed)

								LOCA - NOTES A&D			MSLB - NOTES B&D			LOOP - NOTE C			
EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START P.F.	LOAD (kW)	MOTOR LRC (AMPS)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	REMARKS

The moment at which the diesel generators receive the signal to start is considered 0 second.

The time at which each diesel generator reaches rated rpm and voltage and is ready to accept the loads is assumed as 10 seconds. At this juncture each diesel generator breaker receives a signal to close, energizing its two 1000/1333 4160/480 V kVA transformers.

The loading of the diesel generators by their respective sequencers commences after the breakers are closed, which is considered as Step 1. Hence this timing is taken as 0 second after the generator breaker is closed.

See Note I.

ATTACHMENT 3
ST-HL-AE-1386
PAGE 5 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 2 (1.0 Second After Diesel Generator Breaker Is Closed)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START / P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA TR'B' (kW)	LOCA TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB TR'B' (kW)	MSLB TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP TR'B' (kW)	LOOP TR'C' (kW)	REMARKS
CVCS Valve Cubicle 033 AHU	3V101VAH010, 011	1.0	1.0	0.74	0.74 / 0.24	1.0	16.0	1.0	1.0	-	1.0	1.0	-	1.0	1.0	-	
CVCS Valve Cubicle 044 AHU	3V101VAH007	1.0	1.0	0.74	0.74 / 0.24	1.0	16.0	-	-	1.0	-	-	1.0	-	-	1.0	
CVCS Valve Cubicle 226 AHU	3V101VAH014, 015	1.0	1.0	0.74	0.74 / 0.24	1.0	16.0	-	1.0	1.0	-	1.0	1.0	-	1.0	1.0	
MSIVC HVAC Supply Fans	3V141VFN001, 002, 003	20.0	13.6	0.87	0.80 / 0.24	11.6	116.0	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	Note V
MSIVC HVAC Vent Fan (Steam Driven AFW Pump)	3V141VFN004	15.0	10.4	0.85	0.80 / 0.24	9.10	81.0	9.1	-	-	9.1	-	-	9.1	-	-	Note V
Rad. Monitor and H_2 Monitor AHU Rm. 327A	3V101VAH022, 023	5.0	3.2	0.77	0.80 / 0.24	3.7	25.0	3.7	-	3.7	3.7	-	3.7	3.7	-	3.7	
ECW Pump Cubicle Vent Fan	3V151VFN001 to 006	7.5 (2)	7.5 (2)	0.83	0.77 / 0.24	13.5	66.0	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	Note V
120V Class 1E MCC Panels	3E341EDTA170 to C470(12)	25.0 (kW)	-	-	-	25.0	-	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
Control Emerg. LTG	3E301ELT4M70, 4N70	25.0 (kW)	-	-	-	25.0	-	25.0	-	25.0	25.0	-	25.0	25.0	-	25.0	
Motor Operated Valves	Various	150.0	-	0.81	0.85 / 0.24	128.6	108.0	128.6	128.6	128.6	128.6	128.6	128.6	128.6	128.6	128.6	Notes E&J
Loads This Page (Kilowatts)								217.5	180.7	209.4	217.5	180.7	209.4	217.5	180.7	209.4	

ATTACHMENT 3
ST-HL-AE-1386
PAGE 6 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 2 (1.0 Second After Diesel Generator Breaker Is Closed)

								LOCA - NOTES A&D			MSLB - NOTES B&D			LOOP - NOTE C			
EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. / START P.F.	LOAD (kW)	MOTOR LRC (AMPS)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	RE-MARKS
Battery Room Exhaust Fans	3V111VFH010, 011, 012	5.0	4.2	0.81	0.80 0.24	3.9	43.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	
Battery Room Reheat Coils	3V111VHX008	7.0 (KW)	-	-	-	7.0	-	7.0	-	-	7.0	-	-	7.0	-	-	
Battery Room Reheat Coils	3V111VHX009	6.0 (KW)	-	-	-	6.0	-	6.0	-	-	6.0	-	-	6.0	-	-	
Battery Room Reheat Coils	3V111VHX011	5.0 (KW)	-	-	-	5.0	-	-	5.0	-	-	5.0	-	-	5.0	-	
Battery Room Reheat Coils	3V111VHX012	9.0 (KW)	-	-	-	9.0	-	-	-	9.0	-	-	9.0	-	-	9.0	
Bat. Chgr. E1-A11-1	3E231EBC047A	60.0 (kVA)	-	0.90	0.67	45.0	-	45.0	-	-	45.0	-	-	45.0	-	-	Note G
Bat. Chgr. E1-A11-2	3E231EBC047B	60.0 (kVA)	-	0.90	0.67	45.0	-	45.0	-	-	45.0	-	-	45.0	-	-	Note G
Bat. Chgr. E1-A12-1	3E231EBC047C	60.0 (kVA)	-	0.90	0.67	45.0	-	45.0	-	-	45.0	-	-	45.0	-	-	Note G
Bat. Chgr. E1-A12-2	3E231EBC047D	60.0 (kVA)		BACKUP	-	-	-	-	-	-	-	-	-	-	-	-	Note G
Bat. Chgr. E1-B11-1	3E231EBC047E	60.0 (kVA)	-	0.90	0.67	45.0	-	-	45.0	-	-	45.0	-	-	45.0	-	Note G
Bat. Chgr. E1-B11-2	3E231EBC047F	60.0 (kVA)		BACKUP	-	-	-	-	-	-	-	-	-	-	-	-	Note G
Bat. Chgr. E1-C11-1	3E231EBC047H	60.0 (kVA)	-	0.90	0.67	45.0	-	-	-	45.0	-	-	45.0	-	-	45.0	Note G
Bat. Chgr. E1-C11-2	3E231EBC047G	60.0 (kVA)	-	0.90	0.67	45.0	-	-	-	45.0	-	-	45.0	-	-	45.0	Note G
Loads This Page (Kilowatts)								151.9	53.9	102.9	151.9	53.9	102.9	151.9	53.9	102.9	

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 2 (1.0 Second After Diesel Generator Breaker Is Closed)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA TR'B' (kW)	LOCA TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB TR'B' (kW)	MSLB TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP TR'B' (kW)	LOOP TR'C' (kW)	REMARKS
Voltage Regulators		.		-	-	-	-	-	-	-	-	-	-	-	-	-	Note G
RC Cubicle Exhaust Fans	3V141VFN027 to 030	7.5	4.6	0.84	0.78 0.24	4.1	59.0	-	-	-	-	-	-	8.2	4.1	4.1	Note V
CCP Supplementary Cooler Fans	3V101VAH004, 005	10	10	0.84	0.78 0.24	8.9	25.0	8.9	-	8.9	8.9	-	8.9	8.9	-	8.9	Note V
SBDG JW Circ. Pumps	3Q151MSA0134 0234, 0334	5.0	5.0	0.84	0.78 0.24	4.4	46.0	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	Notes J&K
SBDG Standby LO Pumps	3Q151MSA0134 0234, 0334	60.0	60.0	0.90	0.82 0.24	49.7	435.0	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	Notes J&K
Elec. Penet. Space AHU	3V111VAH004	10.0	6.8	0.83	0.77 0.24	6.1	64.0	6.1	-	-	6.1	-	-	6.1	-	-	
Elec. Penet. Space AHU	3V111VAH005	10.0	6.8	0.83	0.77 0.24	6.1	64.0	-	6.1	-	-	6.1	-	-	6.1	-	
Loads This Page (Kilowatts)								69.1	60.2	63.0	69.1	60.2	63.0	77.3	64.3	67.1	

ATTACHMENT 3
ST-HL-AE-1386
PAGE 8 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 2 (1.0 Second After Diesel Generator Breaker Is Closed)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA - NOTES A&D TR'B' (kW)	LOCA - NOTES A&D TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB - NOTES B&D TR'B' (kW)	MSLB - NOTES B&D TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP - NOTE C TR'B' (kW)	LOOP - NOTE C TR'C' (kW)	REMARKS
Elec. Penet. Space AHU	3V111VAH006	15.0	8.2	0.83	0.77 0.24	7.4	64.0	- -	-	7.4	-	-	7.4	-	-	7.4	
Cont. Hyd. Monit. Panels	3Z161ZLP153, 154	1.0 (kVA)	-	-	-	1.0	-	1.0	1.0	-	1.0	1.0	-	-	-	-	
SBDG LO Heaters	3Q151MHX0134 0234, 0334	19.0 (kW)	-	-	-	19.0	-	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	
SBDG LO Circ. Pumps	3Q151MPU0134 0234, 0334	15.0 (kW)	15.0	0.89	0.8 0.24	13.5	116.0	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	Note J
SBDG JW Heaters	3Q151MWH0134 0234, 0334	40.0 (kW)	-	-	-	40.0	-	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	Note K
SBDG Standby JW Pumps	3Q151MAB0134 0234, 0334	40.0	40.0	0.91	0.79 0.24	32.8	255.0	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	Notes J&K
DGB Emergency Vent Fans	3V131VFN001, 002, 003	75.0	75.0	0.90	0.85 0.33	61.8	550.0	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	
SBDG FO Transfer Pumps	3Q151MPA0134, 0234, 0334	1.5	1.5	0.77	0.80 0.24	1.4	16.8	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	Note J
FHB Main Exhaust Fans	3V121VFN004, 005, 006	30.0	30.0	0.88	0.82 0.24	25.4	240.0	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	
FHB Exhaust Booster Fans	3V121VFN007, 008, 009	50.0	50.0	0.91	0.79 0.24	41.0	390.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	
FHB Exhaust Heaters	3V121VHX007A, 007B, 007C, 008A, 008B, 008C	150.0 (kW)	-	-	-	150.0	-	150.0	150.0	-	150.0	150.0	-	150.0	150.0	-	
FHB IVC AHU	3V121VAH012, 013, 014	1.0	0.3	0.80 0.24	0.75	0.3	32.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	Note
Loads This Page (Kilowatts)								386.6	386.6	243.0	386.6	386.6	243.0	385.6	385.6	243.0	

1340W/0031W

ATTACHMENT 3
ST-HL-AE-1386
PAGE 9 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 2 (1 Second After Diesel Generator Breaker Is Closed)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA - NOTES A&D TR'B' (kW)	LOCA - NOTES A&D TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB - NOTES B&D TR'B' (kW)	MSLB - NOTES B&D TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP - NOTE C TR'B' (kW)	LOOP - NOTE C TR'C' (kW)	REMARKS
SBDG Air Compressors	9Q151MC00134, to 0634,	15.0 (2)	15.0 (2)	0.89	0.80 0.24	25.0	120.0	-	-	-	-	-	-	25.0	25.0	25.0	Notes J, K&L
Non 1E 125 dc Bat. Chg.	8E231EBC125D	75.0 (kVA)	-	-	0.80	60.0	-	-	-	-	-	-	-	60.0	-	-	Note L
Essen. Chillers Pre-lube Pumps	3V111VPA007 008, 009	1.0	1.0	0.74 0.24	0.80	1.0	10.8	-	1.0	1.0	-	1.0	1.0	-	1.0	1.0	Note R
Essential Chiller Room AHU	3V101VAH019, 020, 021	5.0	3.2	0.84	0.78 0.24	2.8	40.0	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	Note V
Loads in Step 2 (Kilowatts)																	
Total Loads at the end of 1 Second								827.9	685.2	622.1	827.9	685.2	622.1	920.1	713.3	651.2	

ATTACHMENT 3
ST-HL-AE-1386
PAGE 10 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 3 (6 Seconds After Diesel Generator Breaker Is Closed)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA TR'B' (kW)	LOCA TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB TR'B' (kW)	MSLB TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP TR'B' (kW)	LOOP TR'C' (kW)	REMARKS
HHSI Pumps	2N121NPA101A, 101B, 101C	1000.0	1000.0	0.95	0.92 0.20	785.3	785.0	785.3	785.3	785.3	785.3	785.3	785.3	-	-	-	
HHSI, LHSI & CS Area Coolers	3V121VFN015A, B,016A,B, 017A,B	5.0 (2)	3.5 (2)	0.82	0.78 0.24	6.4	46.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	Note V
Loads from Steps 1-2 (Kilowatts)								827.9	685.2	622.1	827.9	685.2	622.1	920.1	713.3	651.2	
Loads in Step 3 (Kilowatts)								791.7	791.7	791.7	791.7	791.7	791.7	6.4	6.4	6.4	
Total Loads at the end of 6 Seconds (Kilowatts)								1619.6	1476.9	1413.8	1619.6	1476.9	1413.8	926.5	719.7	657.6	

ATTACHMENT 3
ST-HL-AE-1386
PAGE 11 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 4 (10 Seconds After Diesel Generator Breaker Is Closed)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START / P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA - NOTES A&D TR'B' (kW)	LOCA - NOTES A&D TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB - NOTES B&D TR'B' (kW)	MSLB - NOTES B&D TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP - NOTE C TR'B' (kW)	LOOP - NOTE C TR'C' (kW)	REMARKS
LHSI Pumps	2N121NPA102A, 102B, 102C	400.0	400.0	0.93	0.91 0.27	320.9	300.0	320.9	320.9	320.9	320.9	320.9	320.9	-	-	-	
Centrifugal Charging Pumps	2R171NPA101A 101B	600.0	655.0	0.94	0.92 0.28	519.8	639.0	-	-	-	-	-	-	519.8	-	519.8	

	LOCA TR'A'	LOCA TR'B'	LOCA TR'C'	MSLB TR'A'	MSLB TR'B'	MSLB TR'C'	LOOP TR'A'	LOOP TR'B'	LOOP TR'C'
Loads from Steps 1-3 (Kilowatts)	1619.6	1476.9	1413.8	1619.6	1476.9	1413.8	926.5	719.7	557.6
Loads in Step 4 (Kilowatts)	320.9	320.9	320.9	320.9	320.9	320.9	519.8	-	519.8
Total Loads at the end of 11 Seconds (Kilowatts)	1940.5	1797.8	1734.7	1940.5	1797.8	1734.7	1446.3	719.7	1177.4

ATTACHMENT 3
ST-HL-AE-1386
PAGE 12 OF 24

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 5 (15 Seconds After Diesel Generator Breaker Is Closed)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START / P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA - NOTES A&D TR'B' (kW)	LOCA - NOTES A&D TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB - NOTES B&D TR'B' (kW)	MSLB - NOTES B&D TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP - NOTE C TR'B' (kW)	LOOP - NOTE C TR'C' (kW)	RE-MARKS
Containment Spray Pumps	2N101NPA101A, 101B, 101C	400.0	400.0	0.93	0.91 / 0.27	320.9	300.0	320.9	320.9	320.9	320.9	320.9	320.9	-	-	-	Notes F&J
RCFC Supply Fans	2V141VFN001, to 006	150.0 (2)	150.0 (2)	0.92	0.85 / 0.24	243.3	1486.0	243.3	243.3	243.3	243.3	243.3	243.3	243.3	243.3	243.3	
Loads from Steps 1-4 (Kilowatts)								1940.5	1797.8	1734.7	1940.5	1797.8	1734.7	1446.3	719.7	1177.4	
Loads in Step 5 (Kilowatts)								564.2	564.2	564.2	564.2	564.2	564.2	243.3	243.3	243.3	
Total Loads at the end of 15 Seconds (Kilowatts)								2504.7	2362.0	2298.9	2504.7	2362.0	2298.9	1689.6	963.0	1420.7	

ATTACHMENT 3
ST-HL-AE-1386
PAGE 13 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 6 (20 Seconds After Diesel Generator Breaker Is Closed)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START / P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA - NOTES A&D TR'B' (kW)	LOCA - NOTES A&D TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB - NOTES B&D TR'B' (kW)	MSLB - NOTES B&D TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP - NOTE C TR'B' (kW)	LOOP - NOTE C TR'C' (kW)	REMARKS
CCW Pumps	3R201NPA101A, 101B, 101C	800.0	800.0	0.93	0.90 0.24	641.7	671.0	641.7	641.7	641.7	641.7	641.7	641.7	641.7	641.7	641.7	
CCW Cubicle Fans	3V101VAH001, 002, 003	3.0 (3)	1.4 (3)	0.80	0.75 0.24	3.9	32.0	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	Notes J & V

	LOCA TR'A'	LOCA TR'B'	LOCA TR'C'	MSLB TR'A'	MSLB TR'B'	MSLB TR'C'	LOOP TR'A'	LOOP TR'B'	LOOP TR'C'
Loads from Steps 1-5 (Kilowatts)	2504.7	2362.0	2298.9	2504.7	2362.0	2298.9	1689.6	963.0	1420.7
Loads in Step 6 (Kilowatts)	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6
Total Loads at the end of 20 Seconds (Kilowatts)	3150.3	3007.6	2944.5	3150.3	3007.6	2944.5	2335.2	1608.6	2066.3

ATTACHMENT 3
ST-HL-AE-1386
PAGE 14 OF 26

1340W/0031W

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 7 (25 Seconds After Diesel Generator Breaker Is Closed)

								LOCA - NOTES A&D			MSLB - NOTES B&D			LOOP - NOTE C			
EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START / P.F.	LOAD (kW)	MOTOR LRC (AMPS)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	RE-MARKS
ECW Pumps	3R281NPA101A, 101B, 101C	800.0	800.0	0.94	0.91 / 0.24	634.9	555.0	634.9	634.9	634.9	634.9	634.9	634.9	634.9	634.9	634.9	
ECW Strainers	3R281NSP101A, 101B, 101C	3.0	3.0	0.80	0.75 / 0.24	2.8	32.0	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	Note J
ECW Screen Wash Pumps	3R281NPA102A 102B, 102C	10.0	10.0	.85	.81 / .24	8.8	81.0	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	Note J
ECW Traveling Water Screens	3R281NTW101A 101B, 101C	1.5	1.5	.77	.80 / .24	1.4	17.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
Loads from Steps 1-6 (Kilowatts)								3150.3	3007.6	2944.5	3150.3	3007.6	2944.5	2335.2	1608.6	2066.3	
Loads in Step 7 (Kilowatts)								647.9	647.9	647.9	647.9	647.9	647.9	647.9	647.9	647.9	
Total Loads at the end of 25 Seconds (Kilowatts)								3798.2	3655.5	3592.4	3798.2	3655.5	3592.4	2983.1	2256.5	2714.2	

ATTACHMENT 3
ST-HL-AE-1386
PAGE 15 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 8 (30 Seconds After Diesel Generator Breaker Is Closed)

								LOCA - NOTES A&D			MSLB - NOTES B&D			LOOP - NOTE C			
EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START / P.F.	LOAD (kW)	MOTOR LRC (AMPS)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	RE-MARKS
AFW Pumps	3S141MPA0143 0243, 0343	800.0	800.0	0.95	0.93 0.24	628.2	639.0	628.2	628.2	628.2	628.2	628.2	628.2	628.2	628.2	628.2	
Loads from Steps 1-7 (Kilowatts)								3798.2	3655.5	3592.4	3798.2	3655.5	3592.4	2983.1	2256.5	2714.2	
Loads in Step 8 (Kilowatts)								628.2	628.2	628.2	628.2	628.2	628.2	628.2	628.2	628.2	
Total Loads at the end of 30 Seconds (Kilowatts)								4426.4	4283.7	4220.6	4426.4	4283.7	4220.6	3611.3	2884.7	3342.4	

ATTACHMENT 3
ST-HL-AE-1386
PAGE 16 OF 26

1340W/0031W

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 9 (35 Seconds After Diesel Generator Breaker Is Closed)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA TR'B' (kW)	LOCA TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB TR'B' (kW)	MSLB TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP TR'B' (kW)	LOOP TR'C' (kW)	REMARKS
EAB Makeup Unit Elec. Htg. Coils	3V111VHX004 005, 006	4.5 kW	-	-	-	4.5	-	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
CR Air Cleanup Fans	3V111VFH007, 008, 009	15.0	15.0	0.90	0.80 0.24	12.4	116.0	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	
Essen. Chilled Water Pumps	3V111VPA004, 005, 006	60.0	50.0	0.89	0.85 0.24	53.0	431.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	
EAB Main Area Return Air Fans	3V111VFN001, 002, 003	60.0	60.0	0.91	0.83 0.24	49.2	427.0	49.2	49.2	49.2	49.2	49.2	49.2	49.2	49.2	49.2	
CR Return Air Fans	3V111VFN025, 026, 027	30.0	25.0	0.89	0.79 0.24	20.5	204	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
EAB AHU Supply Fans	3V111VFN014 015, 016	150.0	150.0	0.92	0.85 0.24	121.6	1080.0	121.6	121.6	121.6	121.6	121.6	121.6	121.6	121.6	121.6	
CR Supply Fans	3V111VFN017, 018, 019	50.0	50.0	0.92	0.79 0.24	40.5	390.0	40.5	40.5	40.5	40.5	40.5	40.5	40.5	40.5	40.5	
MCR Air Makeup Fans	3V111VFN004, 005, 006	5.0	5.0	0.84	0.78 0.24	4.4	46.0	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	
Essen. Chiller Pre-lube Pumps	3V111VPA010, 011, 012	1.0	1.0	0.74	0.8 0.24	1.0	10.8	1.0	-	-	1.0	-	-	1.0	-	-	Note U

	LOCA TR'A'	LOCA TR'B'	LOCA TR'C'	MSLB TR'A'	MSLB TR'B'	MSLB TR'C'	LOOP TR'A'	LOOP TR'B'	LOOP TR'C'
Loads from Steps 1-8 (Kilowatts)	4426.4	4283.7	4220.6	4426.4	4283.7	4220.6	3611.3	2884.7	3342.4
Loads in Step 9 (Kilowatts)	307.1	306.1	306.1	307.1	306.1	306.1	307.1	306.1	306.1
Total Loads at the end of 35 Seconds (Kilowatts)	4733.5	4589.8	4526.7	4733.5	4589.8	4526.7	3913.4	3190.8	3648.5

ATTACHMENT 3
ST-HL-AE-1386
PAGE 17 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 10 (40 Seconds After Diesel Generator Breaker Is Closed)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. / START P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA - NOTES A&D TR'B' (kW)	LOCA - NOTES A&D TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB - NOTES B&D TR'B' (kW)	MSLB - NOTES B&D TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP - NOTE C TR'B' (kW)	LOOP - NOTE C TR'C' (kW)	REMARKS
Containment Spray Pumps	2N101NPA101 A, B, & C	400.0	400.0	0.93	0.91 0.27	320.9	300.0	320.9	320.9	320.9	320.9	320.9	320.9	-	-	-	Note H

	LOCA TR'A'	LOCA TR'B'	LOCA TR'C'	MSLB TR'A'	MSLB TR'B'	MSLB TR'C'	LOOP TR'A'	LOOP TR'B'	LOOP TR'C'
Loads from Steps 1-9 (Kilowatts)	4733.5	4589.8	4526.7	4733.5	4589.8	4526.7	3913.4	3190.8	3648.5
Loads in Step 10 (Kilowatts)	-	-	-	-	-	-	-	-	-
Total Loads at the End of 40 Seconds (Kilowatts)	4733.5	4589.8	4526.7	4733.5	4589.8	4526.7	3913.4	3190.8	3648.5

ATTACHMENT 3
ST-HL-AE-1386
PAGE 12 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 11 (65 Seconds After Diesel Generator Breaker Is Closed)

								LOCA - NOTES A&D			MSLB - NOTES B&D			LOOP - NOTE C			
EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START / P.F.	LOAD (kW)	MOTOR LRC (AMPS)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	REMARKS
Essential Chiller	3V111VCH004	396.0 (kW)	-	.946 .24	-	396.0	381	396.0	-	-	396.0	-	-	396.0	-	-	Note P
Essen. Chiller	3V111VCH001	215.0 (kW)	-	.90 .24	-	215.0	1209	215.0	-	-	215.0	-	-	215.0	-	-	Note P

	LOCA TR'A'	LOCA TR'B'	LOCA TR'C'	MSLB TR'A'	MSLB TR'B'	MSLB TR'C'	LOOP TR'A'	LOOP TR'B'	LOOP TR'C'
Loads from Steps 1-10 (Kilowatts)	4733.5	4589.8	4526.7	4733.5	4589.8	4526.7	3913.4	3190.8	3648.5
Loads in Step 11 (Kilowatts)	611.0	-	-	611.0	-	-	611.0	-	-
Total Loads at the end of 65 Seconds (Kilowatts)	5344.0	4589.8	4526.7	5344.0	4589.8	4526.7	4524.4	3190.8	3648.5

ATTACHMENT 3
ST-HL-AE-1386
PAGE 19 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 12 (180 Seconds After Diesel Generator Breaker Is Closed)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA - NOTES A&D TR'B' (kW)	LOCA - NOTES A&D TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB - NOTES B&D TR'B' (kW)	MSLB - NOTES B&D TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP - NOTE C TR'B' (kW)	LOOP - NOTE C TR'C' (kW)	REMARKS
Essen. Chillers	3V111VCH002 003	215.0 (kW)	-	-	.90 .24	215.0 (kW)	1209	-	215.0	215.0	-	215.0	215.0	-	215.0	215.0	Note Q
Loads from Steps 1-11 (Kilowatts)								5344.0	4589.8	4526.7	5344.0	4589.8	4526.7	4524.4	3190.8	3648.5	
Loads in Step 12 (Kilowatts)								-	215.0	215.0	-	215.0	215.0	-	215.0	215.0	
Total Loads at the end of 180 Seconds (Kilowatts)								5344.0	4804.8	4741.7	5344.0	4804.8	4741.7	4524.4	3405.8	3863.3	

ATTACHMENT 3
ST-HL-AE-1386
PAGE 26 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

STEP 13 (270 Seconds After Diesel Generator Breaker Is Closed)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA TR'B' (kW)	LOCA TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB TR'B' (kW)	MSLB TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP TR'B' (kW)	LOOP TR'C' (kW)	REMARKS
Essential Chillers	3V111VCH005 006	393.0 (kW)	-	-	.946 .24	-	381	-	393.0	393.0	-	393.0	393.0	-	393.0	393.0	Note S

	LOCA TR'A'	LOCA TR'B'	LOCA TR'C'	MSLB TR'A'	MSLB TR'B'	MSLB TR'C'	LOOP TR'A'	LOOP TR'B'	LOOP TR'C'
Loads from Steps 1-12 (Kilowatts)	5344.0	4804.8	4741.7	5344.0	4804.8	4741.7	4524.4	3405.8	3563.5
Loads in Step 13 (Kilowatts)	-	393.0	393.0	-	393.0	393.0	-	393.0	393.0
Total Loads at the end of 270 Seconds (Kilowatts)*	5215.4	5069.2	5006.1	5215.4	5069.2	5006.1	4395.8	3670.2	4127.9
D/G Rating (Kilowatts)	5500.0	5500.0	5500.0	5500.0	5500.0	5500.0	5500.0	5500.0	5500.0
Margin (Kilowatts)	284.6	430.8	493.9	284.6	430.8	493.9	1104.2	1829.8	1372.1
Margin (Percent)	5.2	7.8	9.0	5.2	7.8	9.0	20.1	33.3	24.9

* Intermittent Loads (Step 2, 128.6 Kilowatts) Have Been Deducted from Total Loads

ATTACHMENT 3
ST-HL-AE-1382
PAGE 21 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

MANUAL LOADS (STARTED AT OPERATOR'S DISCRETION)

								LOCA - NOTES A&D			MSLB - NOTES B&D			LOOP - NOTE C			
EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START / P.F.	LOAD (kW)	MOTOR LRC (AMPS)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	TR'A' (kW)	TR'B' (kW)	TR'C' (kW)	RE-MARKS
Pressurizer Heaters (Backup Groups 1A & 1B)	7R111EHT101A, 101B	431.0 3770	-	-	431	431.0 377.0	-	-	-	-	-	-	-	431.0	-	431.0	
Reactor Supp. Exhaust Fans	8V141VFN036, 037	10	8.0	0.84	0.78 0.24	7.1	46.0	-	-	-	-	-	-	7.1	7.1	-	Note J
Power Supply PNL's For Hydrogen Recombiner	2N151NHR103A, 103B	75.0 (kW)	-	-	-	75.0	-	-	75.0	75.0	-	-	-	-	-	-	
RHR Pumps	2R161NPA101A, 101B, 101C	300.0	300.0	0.94	0.86 0.30	238.1	2275.0	-	-	-	-	-	-	238.1	238.1	238.1	
RMW Pumps	3R271NPA101A, 101B	50.0	50.0	0.91	0.79 0.24	41.0	390.0	-	41.0	41.0	-	41.0	41.0	-	41.0	41.0	Note J
SFPCCS Pumps	3R211NPA101A, 101B	200.0	200.0	0.93	0.89 0.29	160.4	1440.0	-	160.4	160.4	-	160.4	160.4	-	160.4	160.4	
SFP Pump AHU	3V121VAH010, 011	2.0	0.5	0.84	0.78 0.24	0.5	46.0	-	0.5	0.5	-	0.5	0.5	-	0.5	0.5	Note J
Centrifugal Charging Pumps	2R171NPA101A, 101B	600.0	655.0	0.94	0.92 0.28	519.8	639.0	-	-	-	519.8	-	519.8	-	-	-	
Reactor Cavity Vent. Fans	8V141VFN023, 024	40.0	40.0	0.91	0.79 0.24	32.8	312.0	-	-	-	-	-	-	32.8	-	32.8	Note L
CRDM Vent. Fans	8V141VFN017, 018, 019	40.0	40.0	0.91	0.79 0.24	32.8	312.0	-	-	-	-	-	-	32.8	32.8	32.8	Note L
SBDG FOST* Rm. Exh. Fans	8V131VFN004, 005, 006	1.0	1.0	0.79	-	1.6	12.9	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	
480V Non-1E MCC	8E171EMC01A5, 1B5, 1C5	-	-	-	-	-		156.0	80.0	110.0	156.0	80.0	110.0	-	-	-	Note L
Total Manual Load (Kilowatts)								158.7	359.2	388.9	705.5	284.2	860.7	771.5	482.2	965.6	

*Fuel Oil Storage Tank

1340W/0031W

ATTACHMENT 3
ST-HL-AE-1886
PAGE 22 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS *

MANUAL LOADS (STARTED AT OPERATOR'S DISCRETION)

EQUIPMENT	IDENT. NO.	RATED HP	B.H.P	MOTOR EFF.	MOTOR P.F. START P.F.	LOAD (kW)	MOTOR LRC (AMPS)	LOCA - NOTES A&D TR'A' (kW)	LOCA - NOTES A&D TR'B' (kW)	LOCA - NOTES A&D TR'C' (kW)	MSLB - NOTES B&D TR'A' (kW)	MSLB - NOTES B&D TR'B' (kW)	MSLB - NOTES B&D TR'C' (kW)	LOOP - NOTE C TR'A' (kW)	LOOP - NOTE C TR'B' (kW)	LOOP - NOTE C TR'C' (kW)	RE-MARKS
Boric Acid Transfer Pump Room Supp. Fans	3V101VAH009, 008	1.0	0.4	0.80	0.75 0.24	0.4	32.0	0.4	-	0.4	0.4	-	0.4	0.4	-	0.4	Note J
BAT Pumps	3R171NPA103A, 103B	27.0 kW	27.0 kW	-	0.85 0.28	27.0	126.0	-	-	-	27.0	-	27.0	27.0	-	27.0	
RMW Pumps AHU	3V101VAH012, 013	2.0	2.0	0.77	.8 0.24	1.93	25.0	1.93	1.93	-	1.93	1.93	-	1.93	1.93	-	Note J
Total Manual Load (Kilowatts)								159.9	360.4	388.9	706.7	285.4	860.7	772.6	483.4	965.6	

* No loading at operators discretion is accomplished until completion of automatic sequencer controlled loading, and then only under administrative control.

ATTACHMENT 3
ST.HL.AE.1386
PAGE 23 OF 86

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

NOTES

A. Unless otherwise indicated in the table, Loss of Coolant Accident (LOCA) loads will be required during injection phase (half an hour for large break or two hours for small break), and recirculation phase in large/small break.

B. Unless otherwise indicated in the table, Main Steam Line Break (MSLB) loads will be required during 5 minutes of injection phase and post injection phase.

C. Unless otherwise indicated in the table, loads needed during Loss of Offsite Power (LOOP) will be required for hot standby following LOOP and shutdown below 350°F reactor coolant temperature.

D. This table also includes loads required under LOOP conditions as the worst case.

E. The HP value shown represents a summation of all the motor operated valves connected to the diesel generator and the load is assumed to be intermittent

F. The containment spray pump will receive start signal for 2 seconds at Step-5 then be blocked from starting until 40 seconds (Step-10). See also Note H.

G. Battery charger loading includes loads for 120V class 1E instrument panel.

H. If not started in Step-5, the CSS pump will start in Step 10. See also Note F.

I. The diesel generator shall be capable of maintaining specified voltage within plus 10 minus 20-volts, and frequency within ± 5% of the nominal values throughout the duration of transients caused by load application including initial energization of two 1000/1333 kVA transformers (12 times normal current of 2220 amps for 10 cycles) in step 1, or load removal.

[illegible] motor locked rotor current (LRC) is estimated.

K. If voltage and/or frequency dip exceeds the specification requirements, these loads need to be moved to manual control.

L. These loads are non-Class 1E and are manually loaded only after clearing the safety injection signal. These loads are supplied from non-Class 1E 480 V MCC 1A5, 1B5, or 1C5.

M. Motors above 300 hp are rated 4 kV and motors 300 hp and below are 460 Volts.

N. Class 1E qualified motors but not a safety related function.

O. Chiller lube oil motors are energized, lube oil motors run for the next 35 seconds before chillers compressor motors start.

P. These chillers are assumed to be the regular chillers. Chillers VCH002, 003, 005, or 006 can be designated as standby chillers.

ATTACHMENT 3
ST-HL-AE-1386
PAGE 24 OF 26

TABLE 8.3-3

EMERGENCY ELECTRICAL LOADING REQUIREMENTS

NOTES

Q. Two 150 ton EAB chillers are required to be restarted. These chillers can be of any combination such as VCH002 & 003, 001 & 002, or 001 & 003.

R. The lube oil pumps of the standby EAB chillers (1 X 150T & 1 x 300T) are energized. The standby chillers themselves are energized in Step 11

S. Two 300 ton EAB chillers were operating before event and are required to be restarted. These chillers can be ~~any~~ of any combination such VCH004 and 005, 004 and 006 or 005 & 006.

T. The lube oil pumps of the standby EAB chillers (one 150 ton and one 300 ton) are energized. The standby chillers themselves are energized in Step 12 and the 300 ton chillers are energized in Step 13.

U. The lube oil pumps of the four EAB chillers that were running at the time of LOOP are reenergized. After completion of their lubricating cycles, the 150 ton chillers are energized in Step 12 and the 300 ton chillers are energized in Step 13.

V. Equipment cooling, e.g., ccw pump cubicle fans, only comes on automatically when the equipment comes on or at high room temperature.

ATTACHMENT 3
ST-HL-AE-1386
PAGE 25 OF 26

ATTACHMENT 3
ST-HL-AE-1386
PAGE 26 OF 26

Question 430.133N

Response to NRC question 430.30N refers to Section 8.3.1.1.4.1.1 and Table 8.3-3 of the FSAR. However, these two references include only the ac non-Class 1E loads being supplied from Class 1E buses. The question also requested similar information for dc non-Class 1E loads being supplied from Class 1E buses and should be tripped on receipt of an accident signal. The ac loads included in Table 8.3-3 do not include 120 V ac vital instrument bus loads and any non-Class 1E loads fed from the 120 V ac vital instrument buses that are being shed by an accident signal. Explicitly list all such ac and dc loads.

Response

Table 8.3-3 ~~is being~~ has been revised~~. and will be submitted in a future amendment~~, The following non-Class 1E loads are tripped in the event of an Safety Injection (SI) signal.

480 V	LC EIA Press HTR Group A	431 kW
480 V	LC EIC Press HTR Group B	431 kW
480 V	MCC 1A5* (as listed)	156 kW
	DGB OIL TK RM EXH FAN	1 HP
	REACTOR CAVITY VENT FAN 11B	40 HP
	REACTOP SUPPORT EXH FAN	20 HP
	CRDM VENT FAN	40 HP
	RHRP 1A MINIFLOW MOV	1.9 HP
	STBY DG11 AIR COMPR 12	15 HP
	STBY DG11 AIR COMPR 11	15 HP
	N1E 125vdc BAT CHRG #2	75 kVA
480 V	MCC 1B5* (as listed)	80 kW
	RHRP 1B MINIFLOW MOV	1.9 HP
	CRDM VENT FAN	40 HP
	REACTOR SUPPORT EXH FAN	20 HP
	DGB OIL TK RM EXH FAN	1 HP
	STBY DG #12 AIR COMPR 14	15 HP
	STBY DG #12 AIR COMPR 13	15 HP
480 V	MCC 1C5* (as listed)	110 kW
	RHPP IC MINIFLOW MOV	1.9 HP
	REACTOR CAVITY VENT FAN 11A	40 HP
	CRDM VENT FAN	40 HP
	STBY DG 13 AIR COMPR 16	15 HP
	STBY DG 13 AIR COMPR 15	15 HP
	DGB OIL TK RM EXH FAN	1 HP

* MCC SUPPLY BREAKER TRIPPED