



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

DOCKET NO. 50-423

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 64
License No. NPF-49

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northeast Nuclear Energy Company, et al. (the licensee) dated March 28, 1990, as supplemented July 24, 1990, and November 22, 1991, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - F. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

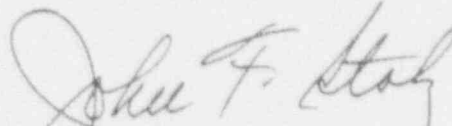
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 64, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance, to be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION:



John F. Stulz, Director
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 9, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 64

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove

x1
3/4 8-1
3/4 8-2
3/4 8-3
3/4 8-4
3/4 8-5
3/4 8-6
3/4 8-7
3/4 8-8
3/4 8-9
3/4 8-10
3/4 8-11
3/4 8-12
3/4 8-13
3/4 8-14
3/4 8-15
3/4 8-16
3/4 8-17
3/4 8-18
3/4 8-19
3/4 8-20
3/4 8-21
3/4 8-22
3/4 8-23

Insert

x1
3/4 8-1
3/4 8-2
3/4 8-3
3/4 8-4
3/4 8-5
3/4 8-6
3/4 8-7
3/4 8-8
3/4 8-9
3/4 8-10
3/4 8-11
3/4 8-12
3/4 8-13
3/4 8-14
3/4 8-15
3/4 8-16
3/4 8-17
3/4 8-18
3/4 8-19
3/4 8-20
3/4 8-21
3/4 8-22
3/4 8-23

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
<u>3/4.8 ELECTRICAL POWER SYSTEMS</u>	
3/4.8.1 A.C. SOURCES	
Operating	3/4 8-1
TABLE 4.8-1 DIESEL GENERATOR TEST SCHEDULE	3/4 8-9
Shutdown	3/4 8-10
3/4.8.2 D.C. SOURCES	
Operating	3/4 8-11
TABLE 4.8-2a BATTERY SURVEILLANCE REQUIREMENTS	3/4 8-13
TABLE 4.8-2b BATTERY CHARGER CAPACITY	3/4 8-14
Shutdown	3/4 8-15
3/4.8.3 ONSITE POWER DISTRIBUTION	
Operating	3/4 8-16
Shutdown	3/4 8-18
3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES	
Containment Penetration Conductor Overcurrent Protective Devices	3/4 8-19
Motor-Operated Valves Thermal Overload Protection	3/4 8-21
Motor-Operated Valves Thermal Overload Protection Not Bypassed	3/4 8-22
A. E. Circuits Inside Containment	3/4 8-23
<u>3/4.9 REFUELING OPERATIONS</u>	
3/4.9.1 BORON CONCENTRATION	3/4 9-1
3/4.9.2 INSTRUMENTATION	3/4 9-2
3/4.9.3 DECAY TIME	3/4 9-3
3/4.9.4 CONTAINMENT BUILDING PENETRATIONS	3/4 9-4
3/4.9.5 COMMUNICATIONS	3/4 9-5

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E Distribution System. and
- b. Two separate and independent diesel generators, each with:
 - 1) A separate day tank containing a minimum volume of 205 gallons of fuel,
 - 2) A separate Fuel Storage System containing a minimum volume of 32,760 gallons of fuel,
 - 3) A separate fuel transfer pump,
 - 4) Lubricating oil storage containing a minimum total volume of 280 gallons of lubricating oil, and
 - 5) Capability to transfer lubricating oil from storage to the diesel generator unit.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With one offsite circuit inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. If either diesel generator has not been successfully tested within the past 24 hours, demonstrate its OPERABILITY by performing Surveillance Requirement 4.8.1.1.2.a.5 separately for each such diesel generator within 24 hours. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.5 within 24 hours*; restore the diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

*This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION (continued)

- c. With one offsite circuit and one diesel generator inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.5 within 8 hours*; restore one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the other A.C. power source (offsite circuit or diesel generator) to OPERABLE status in accordance with the provisions of Section 3.8.1.1 Action Statement a or b, as appropriate with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable A.C. power source. A successful test of diesel generator OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.5 performed under this Action Statement for an OPERABLE diesel generator or a restored to OPERABLE diesel generator satisfies the diesel generator test requirement of Action Statement a or b.
- d. With one diesel generator inoperable, in addition to ACTION b or c above, verify that:
1. All required systems, subsystems, trains, components, and devices that depend on the remaining OPERABLE diesel generator as a source of emergency power are also OPERABLE, and
 2. When in MODE 1, 2, or 3, the steam-driven auxiliary feedwater pump is OPERABLE.

If these conditions are not satisfied within 2 hours, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- e. With two of the required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of two diesel generators by sequentially performing Surveillance Requirement 4.8.1.1.2.a.5 on both diesel generators within 8 hours, unless the diesel generators are already operating; restore one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. Following restoration of one offsite source, follow Action Statement a with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable offsite A.C. circuit. A successful test(s) of diesel generator OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.5 performed under this Action Statement for the OPERABLE diesel generators satisfies the diesel generator test requirement of Action Statement a.

*This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION (continued)

- f. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Following restoration of one diesel generator unit, follow Action Statement b with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable diesel generator. A successful test of diesel generator OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.5 performed under this Action Statement for a restored to OPERABLE diesel generator satisfies the diesel generator test requirement of Action Statement b.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the Onsite Class 1E Distribution System shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring (manually and automatically) unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:
 - 1) Verifying the fuel level in the day tank,
 - 2) Verifying the fuel level in the fuel storage tank,
 - 3) Verifying the fuel transfer pump starts and transfers fuel from the storage system to the day tank,
 - 4) Verifying the lubricating oil inventory in storage,
 - 5) Verifying the diesel starts from ambient condition and gradually accelerates to at least 508 rpm with generator voltage and frequency at 4160 ± 420 volts and 60 ± 0.8 Hz. The diesel generator shall be started for this test by using one of the following signals:
 - a) Manual, or

* Testing shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading requirements.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b) Simulated loss-of-offsite power by itself, or
 - c) Simulated loss-of-offsite power in conjunction with an ESF Actuation test signal, or
 - d) An ESF Actuation test signal by itself.
- 6) Verifying the generator is synchronized and gradually loaded to greater than or equal to 4986 kW and operates for at least 60 minutes, and
- 7) Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
- b. At least once per 184 days the diesel generator shall be started* and accelerated to at least 508 rpm in less than or equal to 11 seconds. The generator voltage and frequency shall be 4160 ± 420 volts and 60 ± 0.8 Hz within 11 seconds after the start signal. The generator shall be synchronized to the associated emergency bus, loaded to greater than or equal to 4986 kW in less than or equal to 60 seconds, and operate for at least 60 minutes. The diesel generator shall be started for this test using one of the signals in Surveillance Requirement 4.8.1.1.2.a.5. This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.5, may also serve to concurrently meet those requirements as well.
- c. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day tank;
- d. At least once per 31 days by checking for and removing accumulated water from the fuel oil storage tanks;
- e. By sampling new fuel oil in accordance with ASTM-D4057 prior to addition to storage tanks and:
- 1) By verifying in accordance with the tests specified in ASTM-D975-81 prior to addition to the storage tanks that the sample has:
 - a) An API Gravity of within 0.3 degrees at 60°F, or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate, or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89, or an API gravity of greater than or equal to 27 degrees but less than or equal to 39 degrees;

* Testing shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading requirements.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b) A kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6, but not less than or equal to 40.1), if gravity was not determined by comparison with the supplier's certification;
 - c) A flash point equal to or greater than 125°F; and
 - d) A clear and bright appearance with proper color when tested in accordance with ASTM-D4176-82.
- 2) By verifying within 30 days of obtaining the sample that the other properties specified in Table 1 of ASTM-D975-81 are met when tested in accordance with ASTM-D975-81 except that the analysis for sulfur may be performed in accordance with ASTM-D1552-79, ASTM-D2622-82 or ASTM-D4294-83.
- f. At least once every 31 days by obtaining a sample of fuel oil in accordance with ASTM-D2276-78, and verifying that total particulate contamination is less than 10 mg/liter when checked in accordance with ASTM-D2276-78, Method A;
- g. At least once per 18 months, during shutdown, by:
- 1) Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service;*
 - 2) Verifying the generator capability to reject a load of greater than or equal to 595 kW while maintaining voltage at 4160 ± 420 volts and frequency at 60 ± 3 Hz;
 - 3) Verifying the generator capability to reject a load of 4986 kW without tripping. The generator voltage shall not exceed 4784 volts during and following the load rejection;
 - 4) Simulating a loss-of-offsite power by itself, and:
 - a) Verifying deenergization of the emergency busses and load shedding from the emergency busses, and
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 11 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 0.8 Hz during this test.

*The provisions of Specification 4.0.6 are applicable.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- 5) Verifying that on an ESF Actuation test signal, without loss-of-offsite power, the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be 4160 ± 420 volts and 60 ± 0.8 Hz within 11 seconds after the auto-start signal; the steady-state generator voltage and frequency shall be maintained within these limits during this test;
- 6) Simulating a loss-of-offsite power in conjunction with an ESF Actuation test signal, and:
 - a) Verifying deenergization of the emergency busses and load shedding from the emergency busses;
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 11 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 0.8 Hz during this test; and
 - c) Verifying that all automatic diesel generator trips, except engine overspeed, lube oil pressure low (2 of 3 logic) and generator differential, are automatically bypassed upon loss of voltage on the emergency bus concurrent with a Safety Injection Actuation signal.
- 7) Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to greater than or equal to 5485 kW and during the remaining 22 hours of this test, the diesel generator shall be loaded to greater than or equal to 4986 kW. The generator voltage and frequency shall be 4160 ± 420 volts and 60 ± 0.8 Hz within 11 seconds after the start signal; the steady-state generator voltage and frequency shall be maintained within these limits during this test. Within 5 minutes after completing this 24-hour test, perform Specification 4.8.1.1.2.g.6)b);*

* If Surveillance Requirement 4.8.1.1.2.g.6)b) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at 4986 kW for 1 hour or until operating temperature has stabilized.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- 8) Verifying that the auto-connected loads to each diesel generator do not exceed the 2000-hour rating of 5335 kW;
- 9) Verifying the diesel generator's capability to:
 - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
 - b) Transfer its loads to the offsite power source, and
 - c) Be restored to its standby status.
- 10) Verifying that with the diesel generator operating in a test mode, connected to its bus, a simulated Safety Injection signal overrides the test mode by: (1) returning the diesel generator to standby operation, and (2) automatically energizing the emergency loads with offsite power;
- 11) Verifying that the fuel transfer pump transfers fuel from each fuel storage tank to the day tank of each diesel via the installed cross-connection lines;
- 12) Verifying that the automatic load sequence timer is OPERABLE with the interval between each load block within $\pm 10\%$ of its design interval; and
- 13) Verifying that the following diesel generator lockout features prevent diesel generator starting:
 - a) Engine overspeed,
 - b) Lube oil pressure low (2 of 3 logic),
 - c) Generator differential, and
 - d) Emergency stop.
- h. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 508 rpm in less than or equal to 11 seconds; and
- i. At least once per 10 years by:
 - 1) Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution, and

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- 2) Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code at a test pressure equal to 110% of the system design pressure.

4.8.1.1.3 Reports - All diesel generator failures, valid or nonvalid, shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2 within 30 days. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977. If the number of failures in the last 100 valid tests (on a per Diesel Generator basis) is greater than or equal to 7, the report shall be supplemented to include the additional information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

<u>Number of Failures in Last 20 Valid Tests.</u>	<u>Number of Failures in Last 100 Valid Tests*</u>	<u>Test Frequency</u>
≤ 1	≤ 4	Once per 31 days
≥ 2**	≥ 5	Once per 7 days

* Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, but determined on a per diesel generator basis.

For the purposes of determining the required test frequency, the previous test failure count may be reduced to zero if a complete diesel overhaul to like-new conditions is completed, provided that the overhaul including appropriate post-maintenance operation and testing, is specifically approved by the manufacturer and if acceptable reliability has been demonstrated. The reliability criterion shall be the successful completion of 14 consecutive tests in a single series. Ten of these tests shall be in accordance with Surveillance Requirement 4.8.1.1.2.a.5, four tests in accordance with Surveillance Requirement 4.8.1.1.2.b. If this criterion is not satisfied during the first series of tests, any alternate criterion to be used to transvalue the failure count to zero requires NRC approval.

** The associated test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one.

ELECTRICAL POWER SYSTEMS

A. C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A. C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the Onsite Class 1E Distribution System, and
- b. One diesel generator with:
 - 1) A day tank containing a minimum volume of 205 gallons of fuel,
 - 2) A fuel storage system containing a minimum volume of 32,760 gallons of fuel,
 - 3) A fuel transfer pump,
 - 4) Lubricating oil storage containing a minimum total volume of 280 gallons of lubricating oil, and
 - 5) Capability to transfer lubricating oil from storage to the diesel generator unit.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above minimum required A. C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, or crane operation with loads over the fuel storage pool, and within 8 hours, depressurize and vent the Reactor Coolant System through a greater than or equal to 5.4 square inch vent. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange, immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the requirements of Specifications 4.8.1.1.1, 4.8.1.1.2 (except for Specification 4.8.1.1.2a.6), and 4.8.1.1.3.

ELECTRICAL POWER SYSTEMS

3/4.8.2 D.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 As a minimum, the following D.C. electrical sources shall be OPERABLE:

- a. 125-volt Battery Bank 301A-1, and an associated full capacity charger,
- b. 125-volt Battery Bank 301A-2, and an associated full capacity charger,
- c. 125-volt Battery Bank 301B-1 and an associated full capacity charger, and
- d. 125-volt Battery Bank 301B-2 and an associated full capacity charger.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With either Battery Bank 301A-1 or 301B-1, and/or one of the required full capacity chargers inoperable, restore the inoperable battery bank and/or full capacity charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With either Battery Bank 301A-2 or 301B-2 inoperable, and/or one of the required full capacity chargers inoperable, restore the inoperable battery bank and/or full capacity charger to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.1 Each 125-volt battery bank and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
 - 1) The parameters in Table 4.8-2a meet the Category A limits, and
 - 2) The total battery terminal voltage is greater than or equal to 129 volts on float charge.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 92 days and within 7 days after a battery discharge with battery terminal voltage below 110 volts, or battery overcharge with battery terminal voltage above 150 volts, by verifying that:
 - 1) The parameters in Table 4.8-2a meet the Category B limits,
 - 2) There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150×10^{-6} ohm, and
 - 3) The average electrolyte temperature of six connected cells is above 60°F.
- c. At least once per 18 months by verifying that:
 - 1) The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration,
 - 2) The cell-to-cell and terminal connections are clean, tight, and coated with anticorrosion material,
 - 3) The resistance of each cell-to-cell and terminal connection is less than or equal to 150×10^{-6} ohm, and
 - 4) Each battery charger will supply at least the amperage indicated in Table 4.8-2b at 125 volts for at least 24 hours.
- d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test;
- e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Once per 60-month interval this performance discharge test may be performed in lieu of the battery service test required by Specification 4.8.2.1d.; and
- f. At least once per 18 months, during shutdown, by giving performance discharge tests of battery capacity to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

TABLE 4.8-2a

BATTERY SURVEILLANCE REQUIREMENTS

PARAMETER	CATEGORY A ⁽¹⁾		CATEGORY B ⁽²⁾
	LIMITS FOR EACH DESIGNATED PILOT CELL	LIMITS FOR EACH CONNECTED CELL	ALLOWABLE ⁽³⁾ VALUE FOR EACH CONNECTED CELL
Electrolyte Level	>Minimum level indication mark, and < 1/4" above maximum level indication mark	>Minimum level indication mark, and < 1/4" above maximum level indication mark	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 volts	≥ 2.13 volts ⁽⁶⁾	> 2.07 volts
Specific Gravity ⁽⁴⁾	≥ 1.200 ⁽⁵⁾	≥ 1.195 Average of all connected cells > 1.205	Not more than 0.020 below the average of all connected cells Average of all connected cells ≥ 1.195 ⁽⁵⁾

TABLE NOTATIONS

- (1) For any Category A parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that within 24 hours all the Category B measurements are taken and found to be within their allowable values, and provided all Category A and B parameter(s) are restored to within limits within the next 6 days.
- (2) For any Category B parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that the Category B parameters are within their allowable values and provided the Category B parameter(s) are restored to within limits within 7 days.
- (3) Any Category B parameter not within its allowable value indicates an inoperable battery.
- (4) Corrected for electrolyte temperature and level.
- (5) Or battery charging current is less than 2 amps when on charge.
- (6) Corrected for average electrolyte temperature.

TABLE 4.8-2b

BATTERY CHARGER CAPACITY

<u>CHARGER</u>	<u>AMPERAGE</u>
301A-1	200
301A-2	50
301A-3	200
301B-1	200
301B-2	50
301B-3	200

ELECTRICAL POWER SYSTEMS

D. C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, one 125-volt battery bank and its associated full-capacity charger shall be OPERABLE.

APPLICABILITY: MODES 5 and 6.

ACTION:

With the required battery bank and/or full-capacity charger inoperable, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, or movement of irradiated fuel; initiate corrective action to restore the required battery bank and full-capacity charger to OPERABLE status as soon as possible, and within 8 hours, depressurize and vent the Reactor Coolant System through a 5.4 square inch vent.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The above required 125-volt battery bank and full-capacity charger shall be demonstrated OPERABLE in accordance with Specification 4.8.2.1.

ELECTRICAL POWER SYSTEMS

3/4.8.3 ONSITE POWER DISTRIBUTION

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.3.1 The following electrical busses shall be energized in the specified manner:

- a. Train A A.C. Emergency Busses consisting of:
 - 1) 4160-Volt Emergency Bus #34C, and
 - 2) 480-Volt Emergency Bus #32R, 32S, 32T, and 32Y.
- b. Train B A.C. Emergency Busses consisting of:
 - 1) 4160-Volt Emergency Bus #34D, and
 - 2) 480-Volt Emergency Bus #32U, 32V, 32W, and 32X.
- c. 120-Volt A.C. Vital Bus #VIAC-1 energized from its associated inverter connected to D.C. Bus #301A-1*,
- d. 120-Volt A.C. Vital Bus #VIAC-2 energized from its associated inverter connected to D.C. Bus #301B-1*,
- e. 120-Volt A.C. Vital Bus #VIAC-3 energized from its associated inverter connected to D.C. Bus #301A-2*,
- f. 120-Volt A.C. Vital Bus #VIAC-4 energized from its associated inverter connected to D.C. Bus #301B-2*,
- g. 125-Volt D.C. Bus #301A-1 energized from Battery Bank #301A-1,
- h. 125-Volt D.C. Bus #301A-2 energized from Battery Bank #301A-2,
- i. 125-Volt D.C. Bus #301B-1 energized from Battery Bank #301B-1, and
- j. 125-Volt D.C. Bus #301B-2 energized from Battery Bank #301B-2.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With one of the required trains of A.C. emergency busses not fully energized, reenergize the division within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one A.C. vital bus either not energized from its associated inverter, or with the inverter not connected to its associated D.C. bus: (1) reenergize the A.C. vital bus within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN

*Two inverters may be disconnected from their D.C. bus for up to 24 hours as necessary, for the purpose of performing an equalizing charge on their associated battery bank provided: (1) their vital busses are energized, and (2) the vital busses associated with the other battery bank are energized from their associated inverters and connected to their associated D.C. bus.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION (Continued)

within the following 30 hours; and (2) reenergize the A.C. vital bus from its associated inverter connected to its associated D.C. bus within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- c. With one D.C. bus not energized from its associated battery bank, reenergize the D.C. bus from its associated battery bank within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.3.1 The specified busses shall be determined energized in the required manner at least once per 7 days by verifying correct breaker alignment and indicated voltage on the busses.

ELECTRICAL POWER SYSTEMS

ONSITE POWER DISTRIBUTION

SHUTDOWN

LIMITING CONDITION FOR OPERATION

2.8.3.2 As a minimum, the following electrical busses shall be energized in the specified manner:

- a. One train of A.C. emergency busses consisting of one 4160-volt and four 480-volt A.C. emergency busses.
- b. Two 120-volt A.C. vital busses energized from their associated inverters connected to their respective D.C. busses, and
- c. Two 125-volt D.C. busses energized from their associated battery banks.

APPLICABILITY: MODES 5 and 6.

ACTION:

With any of the above required electrical busses not energized in the required manner, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, or movement of irradiated fuel, initiate corrective action to energize the required electrical busses in the specified manner as soon as possible, and within 8 hours, depressurize and vent the RCS through at least a 5.4 square inch vent.

SURVEILLANCE REQUIREMENTS

4.8.3.2 The specified busses shall be determined energized in the required manner at least once per 7 days by verifying correct breaker alignment and indicated voltage on the busses.

ELECTRICAL POWER SYSTEMS

3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

LIMITING CONDITION FOR OPERATION

3.8.4.1 All containment penetration conductor overcurrent protective devices shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one or more of the containment penetration conductor overcurrent protective device(s) inoperable:

- a. Restore the protective device(s) to OPERABLE status or deenergize the circuit(s) by tripping the associated backup circuit breaker or racking out or removing the inoperable circuit breaker within 72 hours, declare the affected system or component inoperable, and verify the backup circuit breaker to be tripped or the inoperable circuit breaker racked out or removed at least once per 7 days thereafter; or
- b. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.4.1 All containment penetration conductor overcurrent protective devices shall be demonstrated OPERABLE:

- a. At least once per 18 months:
 - 1) By verifying that the medium voltage (4-15 kV) circuit breakers are OPERABLE by selecting, on a rotating basis, at least 10% of the circuit breakers of each voltage level, and performing the following:
 - a) A CHANNEL CALIBRATION of the associated protective relays,
 - b) An integrated system functional test which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and control circuits function as designed, and

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c) For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.
- 2) By selecting and functionally testing a representative sample of at least 10% of each type of lower voltage circuit breakers. Circuit breakers selected for functional testing shall be selected on a rotating basis.

Testing of air circuit breakers shall consist of injecting a current with a value equal to 300% of the pickup of the long-time delay trip element and 150% of the pickup of the short-time delay trip element, and verifying that the circuit breaker operates within the time delay band width for that current specified by the manufacturer. The instantaneous element shall be tested by injecting a current equal to $\pm 20\%$ of the pickup value of the element and verifying that the circuit breaker trips instantaneously with no intentional time delay.

Molded case circuit breakers and unitized starters (a frame size of 250 amps or less) shall be tested for long time delay at 300% as described above, and in addition tested for the instantaneous trip by injecting a current value which falls within +40% (of the upper limit) and -25% (of the lower limit) of the manufacturers instantaneous trip current range and verifying the breaker trips instantaneously with no intentional time delay. For those molded case circuit breakers/unitized starters used in 480V circuits, if single pole instantaneous test results fall outside these tolerances, additional instantaneous testing shall be conducted using two poles in series, including A-B, B-C and C-A phase combinations. All combination test results shall fall within the specified tolerances.

- Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.
- b. At least once per 60 months by subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.

ELECTRICAL POWER SYSTEMS

MOTOR-OPERATED VALVES THERMAL OVERLOAD PROTECTION

LIMITING CONDITION FOR OPERATION

3.8.4.2.1 Each thermal overload protection, bypassed only under accident conditions for safety-related motor-operated valves shall be bypassed by an OPERABLE bypass device integral with the motor starter.

APPLICABILITY: Whenever the motor-operated valve is required to be OPERABLE.

ACTION:

With the thermal overload protection for one or more of the above required valves not bypassed under conditions for which it is designed to be bypassed, restore the inoperable device or provide a means to bypass the thermal overload within 8 hours, or declare the affected valve(s) inoperable and apply the appropriate ACTION Statement(s) of the affected system(s).

SURVEILLANCE REQUIREMENTS

4.8.4.2.1 The thermal overload protection for the above required valves shall be verified to be bypassed by the appropriate accident signal(s) by performance of a TRIP ACTUATION DEVICE OPERATIONAL TEST of the bypass circuitry during COLD SHUTDOWN or REFUELING at least once per 18 months.

ELECTRICAL POWER SYSTEMS

MOTOR-OPERATED VALVES THERMAL OVERLOAD PROTECTION NOT BYPASSED

LIMITING CONDITION FOR OPERATION

3.8.4.2.2 Each thermal overload protection not bypassed under accident conditions for safety-related motor-operated valves shall be operable.

APPLICABILITY: Whenever the motor-operated valve is required to be OPERABLE.

ACTION:

With the thermal overload protection for one or more of the above required valves inoperable, bypass the inoperable thermal overload within 8 hours; restore the inoperable thermal overload to OPERABLE status within 30 days or declare the affected valve(s) inoperable and apply the appropriate ACTION Statement(s) for the affected system(s).

SURVEILLANCE REQUIREMENTS

4.8.4.2.2 The thermal overload protection for the above required valves shall be demonstrated OPERABLE at least once per 18 months and following maintenance on the motor starter by the performance of a CHANNEL CALIBRATION of a representative sample of at least 25% of all thermal overloads for the above required valves.

ELECTRICAL POWER SYSTEMS

A.C. CIRCUITS INSIDE CONTAINMENT

LIMITING CONDITION FOR OPERATION

3.8.4.3 At least the A.C. circuits for the following valves inside containment shall be de-energized:

<u>Device Number</u>	<u>Valve</u>
3SIL*MV8808A	Accumulator Isolation
3SIL*MV8808B	Accumulator Isolation
3SIL*MV3808C	Accumulator Isolation
3SIL*MV8808D	Accumulator Isolation

APPLICABILITY: MODES 1, 2, 3, and 4

ACTION:

With any of the above required circuits energized, trip the associated circuit breaker(s) within 1 hour.

SURVEILLANCE REQUIREMENTS

4.8.4.3 Each of the A.C. circuits for the above listed valves shall be determined to be de-energized at least once per 24 hours* by verifying that the associated circuit breakers are in the tripped condition.

*Except at least once per 31 days if locked, sealed or otherwise secured in the tripped condition.