ATTACHMENT IV

PROPOSED TECHNICAL SPECIFICATION CHANGES

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

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 390 gallons of fuel,
   2) A separate fuel Oil Storage System containing a minimum volume of 85,300 gallons of fuel, and
   3) A separate fuel transfer pump.

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

ACTION:

a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining off-site A.C. source by performing Specification 4.8.1.1.1 within 1 hour and at least once per 8 hours thereafter. ~~If either diesel generator of the above required A.C. electrical power sources has not been successfully tested within the past 24 hours, demonstrate OPERABILITY by performing Specification 4.8.1.1.2a.4* separately for that diesel generator within 24 hours.~~ Restore at least two offsite circuits 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.

b. With one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the offsite A.C. sources by performing Specification 4.8.1.1.1 within 1 hour and at least once per 8 hours thereafter. Demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Specification 4.8.1.1.2a.4 within 8 24 hours**, **unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated, or if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, preplanned preventive maintenance or testing, or maintenance to correct a condition which, if left uncorrected, would not affect the OPERABILITY of the diesel generator;** restore the inoperable 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.

~~*The automatic start and sequence loading of a diesel generator satisfies the testing requirements of Specification 4.8.1.1.2a.4 for this Action Statement.~~

~~**This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABLE status unless the diesel was declared inoperable to do preplanned preventative maintenance, testing, or maintenance to correct a condition which, if left uncorrected, would not affect the operability of the diesel generator.~~

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A. C. SOURCES

LIMITING CONDITION FOR OPERATION

ACTION (Continued)

c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining offsite A.C. source by performing Specification 4.8.1.1.1 within 1 hour and at least once per 8 hours thereafter and Specification 4.8.1.1.2a.4* within 8 hours** on the redundant diesel generator, **unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated, or if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, preplanned preventive maintenance or testing, or maintenance to correct a condition which, if left uncorrected, would not affect the OPERABILITY of the diesel generator**, restore at least 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 remaining A.C. electrical power source (offsite circuit or diesel generator) to OPERABLE in accordance with Specification 3.8.1.1. ACTION a. or ACTION b. as applicable with the time requirement for the ACTION based on the time of the initial loss of the remaining inoperable A.C. electrical power source. A successful test of diesel generator OPERABILITY performed in accordance with Specification 4.8.1.1.2a.4* under this ACTION for an OPERABLE diesel generator or a diesel generator that was restored to OPERABLE, satisfies the subsequent testing requirement of Specification 3.8.1.1 ~~ACTION a. or~~ ACTION b. for an OPERABLE diesel generator.

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

*The automatic start and sequence loading of a diesel generator satisfies the testing requirements of Specification 4.8.1.1.2a.4 for this Action Statement.

~~**This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABLE status unless the diesel was declared inoperable to do preplanned preventative maintenance, testing, or maintenance to correct a condition which, if left uncorrected, would not affect the operability of the diesel generator.~~

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION (Continued)

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 above required offsite A.C. circuits inoperable, ~~demonstrate the OPERABILITY of two diesel generators by sequentially performing Specification 4.8.1.1.2a.4 within 8 hours unless the diesel generators are already operating~~; restore at least 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 A.C. electrical power source, follow ACTION a. above with the time requirement of ACTION a. based on the time of the initial loss of the remaining inoperable offsite A.C. electrical power source. ~~A successful test of diesel generator OPERABILITY performed in accordance with Specification 4.8.1.1.2a.4* under this ACTION for the OPERABLE diesel generators, satisfies the subsequent testing requirement of Specification 3.8.1.1 ACTION a.~~

f. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Specification 4.8.1.1.1 within 1 hour and at least once per 8 hours thereafter; restore at least 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 follow ACTION b. with the time requirement of the ACTION based on the time of initial loss of the remaining inoperable diesel generator. A successful test of diesel generator operability performed in accordance with Specification 4.8.1.1.2a.4 under this ACTION for the OPERABLE diesel generators, satisfies the subsequent testing requirement of Specification 3.8.1.1 ACTION 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 determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability.

~~*The automatic start and sequence loading of a diesel generator satisfies the testing requirements of Specification 4.8.1.1.2a.4 for this Action Statement.~~

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

At least once per 31 days

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 diesel starts and accelerates to at least 514 rpm in less than or equal to 12 seconds.** The generator voltage and frequency shall be 4160 + 160 - 420 volts and 60 + 1.2 Hz within 12 seconds** after the start signal. The diesel generator shall be started for this test by using one of the following signals:~~

~~a) Manual, or~~

~~b) Simulated loss-of-offsite power by itself, or~~

~~c) Safety Injection test signal.~~

4) Verifying the diesel starts and obtains a voltage of 4160 + 160 - 420 volts, and a frequency of 60 ± 1.2 Hz. The diesel generator can be slow started and allowed to reach rated speed at a rate that is selected to minimize stress and wear,**

5) Verifying the generator is synchronized, gradually loaded to an indicated ~~6000 to 6201~~ **5280 to 5201** kW*** for at least 60 minutes, and **until temperature equilibrium is attained. The rate of loading and unloading of the generator during this test should be gradual, based upon minimizing stress and wear on the diesel generator, and**

6) Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

b. ~~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 tanks;~~

c. ~~At least once per 31 days by checking for and removing accumulated water from the fuel oil storage tanks;~~

**This test shall be preceded by an engine prelube period and/or other warmup procedures recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

***This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring or momentary variations due to changing bus loads shall not invalidate this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

~~d. 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;~~

~~(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, 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 or ASTM D2622-82.~~

~~e. 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.~~

~~f. At least once per 184 days the diesel generators shall be started* from ambient conditions (using the keep warm system) using one of the signals specified in 4.8.1.1.2a.4 and accelerated to at least 514 rpm in less than or equal to 12 seconds. The generator voltage and frequency shall be 4160 + 160-420 volts and 60 ± 1.2 Hz within 12 seconds after the start signal. Subsequently verify the generator is loaded to an indicated 6000 to 6201 kW** in less than or equal to 60 seconds and operates at a load of 6000 to 6201 kW** for at least 60 minutes.~~

b. At least once per 184 days verify each diesel generator starts from standby conditions* and achieves in less than or equal to 12 seconds, a voltage of 4160 + 160 - 420 volts, and a frequency of 60 ± 1.2 Hz using one of the following signals:

1) Manual, or

2) Simulated loss-of-offsite power by itself, or

3) Safety Injection test signal.

*This test shall be preceded by an engine prelube period so that the mechanical stress and wear on the diesel engine is minimized.

~~**This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring or momentary variations due to changing bus loads shall not invalidate this test.~~

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c. ~~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 diesel generator capability to reject the ESW pump motor load (the largest single emergency load) while maintaining voltage at 4160 + 160 - 420 volts and frequency at 60 ± 5.4 Hz.~~

~~3) Verifying the diesel generator capability to reject a load of 6201 kW without tripping. The generator voltage shall not exceed 4784 volts during and following the load rejection.~~

1) Verifying each diesel generator operating at a power factor between 0.8 and 0.9 does not trip on overspeed and voltage does not exceed 4784 volts and frequency does not exceed 65.4 Hz following a load rejection of 5580 to 6201 kW,**

~~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 12 seconds, energizes the auto-connected shutdown loads through the shutdown 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 + 160 - 420 volts and 60 ± 1.2 Hz during this test.~~

2) Verifying on an actual or simulated loss-of-offsite power signal (LOOP)**:

a) De-energization of emergency buses;

b) Load shedding of emergency buses;

c) The diesel generator auto-starts from standby conditions*** and:

1) energizes permanently connected loads within 12 seconds,

2) energizes the auto-connected shutdown loads through the shutdown sequencer,

3) maintains steady state voltage at 4160 + 160 - 420 volts,

4) maintains steady state frequency at 60 ± 1.2 Hz, and

5) operates for greater than or equal to 5 minutes while the generator is loaded with the shutdown loads.

**This surveillance shall not be performed in Modes 1 or 2 and credit may be taken for unplanned events that satisfy this requirement.

***This test shall be preceded by an engine prelube period and/or other warmup procedures recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

~~5) Verifying that on a Safety Injection 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, and the offsite power source energizes the auto-connected emergency (accident) load through the LOCA sequencer. The generator voltage and frequency shall be 4160 + 160 - 420 volts and 60 ± 1.2 Hz within 12 seconds after the auto-start signal; the generator steady-state generator voltage and frequency shall be maintained within these limits during this test.~~

3) Verifying on an actual or simulated Safety Injection Actuation Signal (SIAS)** that each diesel generator auto-starts from the standby condition* and:

a) achieves a voltage of 4160 + 160 - 420 volts in less than or equal to 12 seconds after the auto-start signal;

b) achieves a frequency of 60 ± 1.2 Hz in less than or equal to 12 seconds after the auto-start signal;

c) operates on standby for greater than or equal to 5 minutes;

d) the offsite power source energizes the auto-connected (accident) loads through the LOCA sequencer.

~~6) Simulating a loss-of-offsite power in conjunction with a Safety Injection 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 12 seconds, energizes the auto-connected emergency (accident) loads through the LOCA 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 + 160 - 420 volts and 60 ± 1.2 Hz during this test; and~~

~~c) Verifying that all automatic diesel generator trips, except high jacket coolant temperature, engine overspeed, low lube oil pressure, high crankcase pressure, start failure relay, and generator differential, are automatically bypassed upon loss of voltage on the emergency bus concurrent with a Safety Injection Actuation signal.~~

4) Verifying on a simulated loss-of-offsite power in conjunction with a simulated Safety Injection Actuation Signal (SIAS)** that each diesel generator auto-starts from the standby condition* and:

a) achieves a voltage of 4160 + 160 - 420 volts in less than or equal to 12 seconds after the auto-start signal;

b) achieves a frequency of 60 ± 1.2 Hz in less than or equal to 12 seconds after the auto-start signal;

c) de-energization of the emergency busses and load shedding from the emergency busses;

d) energizes the emergency busses with permanently connected loads within 12 seconds, energizes the auto-connected emergency (accident) loads through the LOCA sequencer;

e) operates for greater than or equal to 5 minutes while its generator is loaded with emergency loads.

~~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 an indicated 6600 to 6821 kW** and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 6000 to 6201 kW.** The generator voltage and frequency shall be 4160 + 160 - 420 volts and 60 + 1.2 Hz, - 3 Hz within 12 seconds after the start signal; the steady-state generator voltage and frequency shall be maintained within 4160 + 160 - 420 volts and 60 ± 1.2 Hz during this test. Within 5 minutes after completing this 24-hour test, perform Specification 4.8.1.1.2g.6b*.~~

5) Verifying each diesel generator's automatic trips are bypassed upon the simulated SIAS and LOOP combined test** except:

a) High jacket coolant temperature;

b) Engine Overspeed;

c) Low lube oil pressure;

d) High crankcase pressure;

e) Start failure relay;

f) Generator differential current.

*This test shall be preceded by an engine prelube period and/or other warmup procedures recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

**This surveillance shall not be performed in Modes 1 or 2 and credit may be taken for unplanned events that satisfy this requirement.

~~**This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring or momentary variations due to changing bus loads shall not invalidate this test.~~

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

~~8) Verifying that the auto-connected loads to each diesel generator do not exceed 6201 kW;~~

6) Verifying full-load carrying capability of the diesel generator at a power factor between 0.8 and 0.9 for an interval of not less than 24 hours at 5580 to 6201 kW (indicated). The generator voltage and frequency shall be maintained within 4160 + 160 - 420 volts and 60 ± 1.2 Hz during this test;

7) ~~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.

8) ~~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;

9) ~~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; and

10) ~~12)~~ Verifying that the automatic LOCA and Shutdown sequence timer is OPERABLE with the interval between each load block within ± 10% of its design interval.

~~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 514 rpm in less than or equal to 12 seconds; and~~

d. At least once per 10 years verify that when started simultaneously from standby conditions, each diesel generator achieves in less than or equal to 12 seconds, a voltage of 4160 + 160 - 420 volts and a frequency of 60 ± 1.2 Hz.**

~~*If Specification 4.8.1.1.2g.6b is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at 6201 kW for 1 hour or until operating temperature has stabilized.~~

***This surveillance shall not be performed in Modes 1, 2, 3, or 4 and credit may be taken for unplanned events that satisfy this requirement.**

**This test shall be preceded by an engine prelube period and/or other warmup procedures recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

e. ~~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 or equivalent.~~

2) **Removing the accumulated sediment,**

3) **Cleaning the tank to remove microbiological growth.**

~~4.8.1.1.3 Reports - All diesel generator failures, valid or nonvalid, shall be reported in a Special Report to the Commission 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 nuclear unit 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~~

~~NUMBER OF FAILURES IN LAST 20 VALID TESTS*~~	~~TEST FREQUENCY~~
~~≤ 1~~	~~At least once per 31 days~~
~~≥ 2**~~	~~At least once per 7 days~~

~~*Criteria for determining number of valid failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, Revision 1, August 1977, 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 Specifications 4.8.1.1.2a.4 and 4.8.1.1.2a.5, four tests, in accordance with Specification 4.8.1.1.2f. 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 consec failure free tests have been performed and the number of failures in the last 20 valid tests 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 390 gallons of fuel,

2) A fuel storage system containing a minimum volume of 85,300 gallons of fuel, and

3) A fuel transfer pump.

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 spent fuel pool. 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 and 4.8.1.1.2 (except for Specification 4.8.1.1.2a.5)) ~~a and 4.8.1.1.3.~~

3/4.8.1, 3/4.8.2, and 3/4.8.3 A.C. SOURCES, D.C. SOURCES AND ONSITE POWER DISTRIBUTION

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety-related equipment required for: (1) the safe shutdown of the facility, and (2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix A to 10 CFR Part 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the safety analyses and are based upon maintaining at least one redundant set of onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss-of-offsite power and single failure of the other onsite A.C. source. The A.C. source and D.C. source allowable out-of-service times are based on Regulatory Guide 1.93, "Availability of Electrical Power Sources", December 1974. When one diesel generator is inoperable, there is an additional ACTION requirement to verify that 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 that the steam-driven auxiliary feedwater pump is OPERABLE. This requirement is intended to provide assurance that a loss-of-offsite power event will not result in a complete loss of safety function of critical systems during the period one of the diesel generators is inoperable. The term verify as used in this context means to administratively check by examining logs or other information to determine if certain components are out-of-service for maintenance or other reasons. It does not mean to perform the Surveillance Requirements needed to demonstrate the OPERABILITY of the component.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that: (1) the facility can be maintained in the shutdown or refueling condition for extended time periods, and (2) sufficient instrumentation and control capability are available for monitoring and maintaining the unit status.

When determining compliance with action statement requirements, addition to the RCS of borated water with a concentration greater than or equal to the minimum required RWST concentration shall not be considered to be a positive reactivity change.

~~The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guides 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," Revision 1, November 1978, 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977 as modified by Amendment No. 8 issued on May 29, 1987, and 1.137, "Fuel Oil Systems for Standby Diesel Generators," Revision 1, October 1979.~~

INSERT "A"

ELECTRIC POWER SYSTEMS

BASES

A.C. SOURCES, D.C. SOURCES, AND ONSITE POWER DISTRIBUTION (Continued)

~~Each diesel generator (DG) is provided with an engine overspeed trip to prevent damage to the engine. Recovery from the transient caused by the loss of a large load could cause diesel engine overspeed, which, if excessive, might result in a trip of the engine. The DG load response characteristics and capability to reject the largest single load without exceeding predetermined voltage and frequency are demonstrated while maintaining a specified margin to the overspeed trip as required by Regulatory Guide 1.9, Position C.4. For meeting Surveillance Requirements, the largest single load is defined as a load equivalent to the ESW pump motor while under the full post-LOCA mode of operation.~~

The Surveillance Requirement for demonstrating the OPERABILITY of the Station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," February 1978, and IEEE Std 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."

Verifying average electrolyte temperature above the minimum for which the battery was sized, total battery terminal voltage on float charge, connection resistance values and the performance of battery service and discharge tests ensures the effectiveness of the charging system, the ability to handle high discharge rates and compares the battery capacity at that time with the rated capacity.

Table 4.8-2 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage and specific gravity. The limits for the designated pilot cells float voltage and specific gravity, greater than 2.13 volts and 0.015 below the manufacturer's full charge specific gravity or a battery charger current that had stabilized at a low value, is characteristic of a charged cell with adequate capacity. The normal limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than 0.020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than 0.010 below the manufacturer's full charge specific gravity, ensures the OPERABILITY and capability of the battery.

Operation with a battery cell's parameter outside the normal limit but within the allowable value specified in Table 4.8-2 is permitted for up to 7 days. During this 7-day period: (1) the allowable values for electrolyte level ensures no physical damage to the plates with an adequate electron transfer capability; (2) the allowable value for the average specific gravity of all the cells, not more than 0.020 below the manufacturer's recommended full charge specific gravity, ensures that the decrease in rating will be less than the safety margin provided in sizing; (3) the allowable value for an individual cell's specific gravity, ensures that an individual cell's specific gravity will not be more than 0.040 below the manufacturer's full charge specific gravity and that the overall capability of the battery will be maintained within an acceptable limit; and (4) the allowable value for an individual cell's float voltage, greater than 2.07 volts, ensures the battery's capability to perform its design function.

PROCEDURES AND PROGRAMS (Continued)

8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,

9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from iodine-131, iodine-133, tritium and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,

10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

f. Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM.

2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and the modifications to the monitoring program are made if required by the results of this census, and

3) Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

INSERT "B"

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Regional Administrator of the NRC Regional Office unless otherwise noted.

INSERT "A"

The surveillance requirements of Technical Specification 3/4.8.1 are based upon, in part, the guidance of Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators From Plant Technical Specifications," Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," Regulatory Guide 1.9, "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electrical Power Systems at Nuclear Power Plants," Revision 3, and NUREG-1431, "Standard Technical Specifications - Westinghouse Plants." Also, the guidance of NUMARC 87-00, "Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors," Revision 1, and Regulatory Guide 1.160 has been adopted to formulate a comprehensive Emergency Diesel Generator Reliability Program.

Technical Specification 3.8.1.1, Action b and c, require, in part, the demonstration of the operability of the remaining operable emergency diesel generator by performing Technical Specification 4.8.1.1.2a.4. This test is required to be completed regardless of when the inoperable emergency diesel generator is restored to operable status unless the emergency diesel generator was declared inoperable to do preplanned preventative maintenance, testing, or maintenance to correct a condition which, if left uncorrected, would not affect the operability of the emergency diesel generator. The requirement to test the remaining operable emergency diesel generator when one emergency diesel generator is inoperable is limited to those situations where the cause for inoperability can not be conclusively demonstrated in order to preclude the potential for common mode failures. The test is not required to be accomplished if the emergency diesel generator was declared inoperable due to an inoperable support system or an independently testable component. When such a test is required, it is required to be performed within 8 hours of having determined that the emergency diesel generator is inoperable.

Technical Specification 4.8.1.1.2a.4 is considered to be a "Start Test" as described in Regulatory Guide 1.9, Revision 3. A "Start Test" is performed to demonstrate proper startup from standby conditions and to verify that the required design voltage and frequency is attained. For these tests, Regulatory Guide 1.9, Revision 3, recommends that the emergency diesel generators be slow started and allowed to reach rated speed on a prescribed schedule that is selected to minimize stress and wear.

Regulatory Guide 1.9, Revision 3, considers Technical Specification 4.8.1.1.2a.5 to be a "Load-Run Test". A "Load-Run Test" demonstrates 90 to 100 percent (5580 to 6201 kilowatts) of the continuous rating (6201 kilowatts) of the emergency diesel generator for an interval of not less than 1 hour and until temperature equilibrium has been attained. This test may be accomplished by synchronizing the generator with offsite power and the loading and unloading of an diesel generator during this test should be gradual and based on a prescribed schedule that is selected to minimize stress and wear on the diesel generator.

Regulatory Guide 1.9, Revision 3, considers Technical Specification 4.8.1.1.2b to be a "Fast-Start Test". A "Fast-Start Test" demonstrates that each emergency diesel generator starts from standby conditions. If a plant normally has in operation keep warm systems designed to maintain lube oil and jacket water cooling at certain temperatures or prelubrication systems or both, this would constitute normal standby conditions for that plant. Verification that the emergency diesel generator reaches required voltage and frequency within acceptable limits and time is also required.

The requirements of the "Single-Load Rejection Test" and the "Full-Load Rejection Test" as described in Regulatory Guide 1.9, Revision 3 have been combined. The "Full-Load Rejection Test" is a demonstration of the emergency diesel generator's capability to reject a load equal to 90 to 100 percent of its continuous rating (5580 to 6201 kilowatts) while operating at a power factor between 0.8 and 0.9 and that the voltage does not exceed 4784 volts and that the frequency does not exceed 65.4 Hertz following a load rejection of 5580 to 6201 kilowatts. The frequency criteria is from the "Single-Load Rejection Test" and is based on nominal engine speed plus 75 percent of the difference between nominal speed and the over-speed trip setpoint.

The note that will not allow a surveillance requirement to be performed in Modes 1 or 2 is based on the improved Standard Technical Specifications (NUREG-1431) which recognizes that the performance of certain surveillance requirements during operation with the reactor critical could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems.

INSERT "B"

g. Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil. The program shall include sampling and testing requirements, and acceptance criteria, based upon the applicable ASTM Standards. The purpose of the program is to establish the following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

1. an API gravity or an absolute specific gravity within limits,

2. a flash point within limits for ASTM 2D fuel oil,

3. a kinematic viscosity within limits for ASTM 2D fuel oil,

4. a water and sediment content within the limits for ASTM 2D fuel oil, and

5. a total particulate concentration of $\leq$ 10 mg/l;

b. Other properties for ASTM 2D fuel oil are within limits within 30 days following sampling and addition of new fuel oil to storage tanks.

h. Emergency Diesel Generator Reliability Program

An emergency diesel generator reliability program that establishes the requirements and guidelines for emergency diesel generator reliability, availability, and monitoring. The program shall include the following:

a. Emergency diesel generator reliability performance goals (target reliability) based upon the station blackout coping assessment. Target reliability goal monitoring is accomplished through monitoring methods that are based upon those described in Appendix D of NUMARC 87-00,

b. Measures to ensure detailed root cause analysis of emergency diesel generator failures is performed and effective corrective actions are taken in response to failures,

c. Implementation of an emergency diesel generator preventive maintenance program that is consistent with the Maintenance Rule, and

d. Monitoring of emergency diesel generator availability and performance parameters to ensure the target reliability is met or exceeded.

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 390 gallons of fuel,
   2) A separate fuel Oil Storage System containing a minimum volume of 85,300 gallons of fuel, and
   3) A separate fuel transfer pump.

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

ACTION:

a. With an offsite circuit of the above required A.C electrical power sources inoperable, demonstrate the OPERABILITY of the remaining off-site A.C. source by performing Specification 4.8.1.1.1 within 1 hour and at least once per 8 hours thereafter. Restore at least two offsite circuits 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.

b. With one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the offsite A.C. sources by performing Specification 4.8.1.1.1 within 1 hour and at least once per 8 hours thereafter. Demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Specification 4.8.1.1.2a.4 within 8 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated, or if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, preplanned preventive maintenance or testing, or maintenance to correct a condition which, if left uncorrected, would not affect the OPERABILITY of the diesel generator; restore the inoperable 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.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A. C. SOURCES

LIMITING CONDITION FOR OPERATION

ACTION (Continued)

c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining offsite A.C. source by performing Specification 4.8.1.1.1 within 1 hour and at least once per 8 hours thereafter and Specification 4.8.1.1.2a.4* within 8 hours on the redundant diesel generator, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated, or if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, preplanned preventive maintenance or testing, or maintenance to correct a condition which, if left uncorrected, would not affect the OPERABILITY of the diesel generator; restore at least 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 remaining A.C. electrical power source (offsite circuit or diesel generator) to OPERABLE in accordance with Specification 3.8.1.1. ACTION a. or ACTION b. as applicable with the time requirement for the ACTION based on the time of the initial loss of the remaining inoperable A.C. electrical power source. A successful test of diesel generator OPERABILITY performed in accordance with Specification 4.8.1.1.2a.4* under this ACTION for an OPERABLE diesel generator or a diesel generator that was restored to OPERABLE, satisfies the subsequent testing requirement of Specification 3.8.1.1 ACTION b. for an OPERABLE diesel generator.

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

*The automatic start and sequence loading of a diesel generator satisfies the testing requirements of Specification 4.8.1.1.2a.4 for this Action Statement.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION (Continued)

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 above required offsite A.C. circuits inoperable, restore at least 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 A.C. electrical power source, follow ACTION a. above with the time requirement of ACTION a. based on the time of the initial loss of the remaining inoperable offsite A.C. electrical power source.

f. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Specification 4.8.1.1.1 within 1 hour and at least once per 8 hours thereafter; restore at least 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 follow ACTION b. with the time requirement of the ACTION based on the time of initial loss of the remaining inoperable diesel generator. A successful test of diesel generator operability performed in accordance with Specification 4.8.1.1.2a.4 under this ACTION for the OPERABLE diesel generators, satisfies the subsequent testing requirement of Specification 3.8.1.1 ACTION 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 determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

a. At least once per 31 days 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 diesel starts** and obtains a voltage of 4160 + 160 - 420 volts, and a frequency of 60 ± 1.2 Hz. The diesel generator can be slow started and allowed to reach rated speed at a rate that is selected to minimize stress and wear,

5) Verifying the generator is synchronized, gradually loaded to an indicated 5580 to 6201 kW*** for at least 60 minutes, and until temperature equilibrium is attained. The rate of loading and unloading of the generator during this test should be gradual, based upon minimizing stress and wear on the diesel generator, and

6) Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

b. At least once per 184 days verify each diesel generator starts from standby conditions* and achieves in less than or equal to 12 seconds, a voltage of 4160 + 160 - 420 volts, and a frequency of 60 ± 1.2 Hz using one of the following signals:

1) Manual, or

2) Simulated loss-of-offsite power by itself, or

3) Safety Injection test signal.

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*This test shall be preceded by an engine prelube period so that the mechanical stress and wear on the diesel engine is minimized.

**This test shall be preceded by an engine prelube period and/or other warmup procedures recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

***This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring or momentary variations due to changing bus loads shall not invalidate this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months, during shutdown, by:

1) Verifying each diesel generator operating at a power factor between 0.8 and 0.9 does not trip on overspeed and voltage does not exceed 4784 volts and frequency does not exceed 65.4 Hz following a load rejection of 5580 to 6201 kW,**

2) Verifying on an actual or simulated loss-of-offsite power signal (LOOP)**:

a) De-energization of emergency buses;

b) Load shedding of emergency buses;

c) The diesel generator auto-starts from standby conditions*** and:

1) energizes permanently connected loads within 12 seconds,

2) energizes the auto-connected shutdown loads through the shutdown sequencer,

3) maintains steady state voltage at 4160 + 160 - 420 volts,

4) maintains steady state frequency at 60 ± 1.2 Hz, and

5) operates for greater than or equal to 5 minutes while the generator is loaded with the shutdown loads.

3) Verifying on an actual or simulated Safety Injection Actuation Signal (SIAS)** that each diesel generator auto-starts from the standby condition* and:

a) achieves a voltage of 4160 + 160 - 420 volts in less than or equal to 12 seconds after the auto-start signal;

b) achieves a frequency of 60 ± 1.2 Hz in less than or equal to 12 seconds after the auto-start signal;

c) operates on standby for greater than or equal to 5 minutes;

d) the offsite power source energizes the auto-connected (accident) loads through the LOCA sequencer.

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*This test shall be preceded by an engine prelube period and/or other warmup procedures recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

**This surveillance shall not be performed in Modes 1 or 2 and credit may be taken for unplanned events that satisfy this requirement.

***This test shall be preceded by an engine prelube period and/or other warmup procedures recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4) Verifying on a simulated loss-of-offsite power in conjunction with a simulated Safety Injection Actuation Signal (SIAS)** that each diesel generator auto-starts from the standby condition* and:

   a) achieves a voltage of 4160 + 160 - 420 volts in less than or equal to 12 seconds after the auto-start signal;

   b) achieves a frequency of 60 ± 1.2 Hz in less than or equal to 12 seconds after the auto-start signal;

   c) de-energization of the emergency busses and load shedding from the emergency busses;

   d) energizes the emergency busses with permanently connected loads within 12 seconds, energizes the auto-connected emergency (accident) loads through the LOCA sequencer;

   e) operates for greater than or equal to 5 minutes while its generator is loaded with emergency loads.

5) Verifying each diesel generator's automatic trips are bypassed upon the simulated SIAS and LOOP combined test** except:

   a) High jacket coolant temperature;

   b) Engine Overspeed;

   c) Low lube oil pressure;

   d) High crankcase pressure;

   e) Start failure relay;

   f) Generator differential current.

6) Verifying full-load carrying capability of the diesel generator at a power factor between 0.8 and 0.9 for an interval of not less than 24 hours at 5580 to 3201 kW (indicated). The generator voltage and frequency shall be maintained within 4160 + 160 - 420 volts and 60 ± 1.2 Hz during this test;

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*This test shall be preceded by an engine prelube period and/or other warmup procedures recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

**This surveillance shall not be performed in Modes 1 or 2 and credit may be taken for unplanned events that satisfy this requirement.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

7) 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.

8) 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;

9) 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; and

10) Verifying that the automatic LOCA and Shutdown sequence timer is OPERABLE with the interval between each load block within ± 10% of its design interval.

d. At least once per 10 years verify that when started simultaneously from standby conditions,** each diesel generator achieves in less than or equal to 12 seconds, a voltage of 4160 + 160 - 420 volts and a frequency of 60 ± 1.2 Hz.

e. At least once per 10 years by:

1) Draining each fuel oil storage tank,

2) Removing the accumulated sediment,

3) Cleaning the tank to remove microbiological growth.

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*This surveillance shall not be performed in Modes 1, 2, 3, or 4 and credit may be taken for unplanned events that satisfy this requirement.

**This test shall be preceded by an engine prelube period and/or other warmup procedures recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

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 390 gallons of fuel,

2) A fuel storage system containing a minimum volume of 85,300 gallons of fuel, and

3) A fuel transfer pump.

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 spent fuel pool. 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 and 4.8.1.1.2 (except for Specification 4.8.1.1.2a.5).

3/4.8.1, 3/4.8.2, and 3/4.8.3 A.C. SOURCES, D.C. SOURCES, AND ONSITE POWER DISTRIBUTION

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety-related equipment required for: (1) the safe shutdown of the facility, and (2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix A to 10 CFR Part 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the safety analyses and are based upon maintaining at least one redundant set of onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss-of-offsite power and single failure of the other onsite A.C. source. The A.C. source and D.C. source allowable out-of-service times are based on Regulatory Guide 1.93, "Availability of Electrical Power Sources", December 1974. When one diesel generator is inoperable, there is an additional ACTION requirement to verify that 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 that the steam-driven auxiliary feedwater pump is OPERABLE. This requirement is intended to provide assurance that a loss-of-offsite power event will not result in a complete loss of safety function of critical systems during the period one of the diesel generators is inoperable. The term verify as used in this context means to administratively check by examining logs or other information to determine if certain components are out-of-service for maintenance or other reasons. It does not mean to perform the Surveillance Requirements needed to demonstrate the OPERABILITY of the component.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that: (1) the facility can be maintained in the shutdown or refueling condition for extended time periods, and (2) sufficient instrumentation and control capability are available for monitoring and maintaining the unit status.

When determining compliance with action statement requirements, addition to the RCS of borated water with a concentration greater than or equal to the minimum required RWST concentration shall not be considered to be a positive reactivity change.

The surveillance requirements of Technical Specification 3/4.8.1 are based upon, in part, the guidance of Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators From Plant Technical Specifications," Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," Regulatory Guide 1.9, "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electrical Power Systems at Nuclear Power Plants," Revision 3, and NUREG-1431, "Standard Technical Specifications - Westinghouse Plants." Also, the guidance of NUMARC 87-00, "Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors," Revision 1, and Regulatory Guide 1.160 has been adopted to formulate a comprehensive Emergency Diesel Generator Reliability Program.

ELECTRIC POWER SYSTEMS

BASES

A.C. SOURCES, D.C. SOURCES, AND ONSITE POWER DISTRIBUTION (Continued)

Technical Specification 3.8.1.1, Action b and c, require, in part, the demonstration of the operability of the remaining operable emergency diesel generator by performing Technical Specification 4.8.1.1.2a.4. This test is required to be completed regardless of when the inoperable emergency diesel generator is restored to operable status unless the emergency diesel generator was declared inoperable to do preplanned preventative maintenance, testing, or maintenance to correct a condition which, if left uncorrected, would not affect the operability of the emergency diesel generator. The requirement to test the remaining operable emergency diesel generator when one emergency diesel generator is inoperable is limited to those situations where the cause for inoperability can not be conclusively demonstrated in order to preclude the potential for common mode failures. The test is not required to be accomplished if the emergency diesel generator was declared inoperable due to an inoperable support system or an independently testable component. When such a test is required, it is required to be performed within 8 hours of having determined that the emergency diesel generator is inoperable.

Technical Specification 4.8.1.1.2a.4 is considered to be a "Start Test" as described in Regulatory Guide 1.9, Revision 3. A "Start Test" is performed to demonstrate proper startup from standby conditions and to verify that the required design voltage and frequency is attained. For these tests, Regulatory Guide 1.9, Revision 3, recommends that the emergency diesel generators be slow started and allowed to reach rated speed on a prescribed schedule that is selected to minimize stress and wear.

Regulatory Guide 1.9, Revision 3, considers Technical Specification 4.8.1.1.2a.5 to be a "Load-Run Test". A "Load-Run Test" demonstrates 90 to 100 percent (5580 to 6201 kilowatts) of the continuous rating (6201 kilowatts) of the emergency diesel generator for an interval of not less than 1 hour and until temperature equilibrium has been attained. This test may be accomplished by synchronizing the generator with offsite power and the loading and unloading of an diesel generator during this test should be gradual and based on a prescribed schedule that is selected to minimize stress and wear on the diesel generator.

Regulatory Guide 1.9, Revision 3, considers Technical Specification 4.8.1.1.2b to be a "Fast-Start Test". A "Fast-Start Test" demonstrates that each emergency diesel generator starts from standby conditions. If a plant normally has in operation keep warm systems designed to maintain lube oil and jacket water cooling at certain temperatures or prelubrication systems or both, this would constitute normal standby conditions for that plant. Verification that the emergency diesel generator reaches required voltage and frequency within acceptable limits and time is also required.

The requirements of the "Single-Load Rejection Test" and the "Full-Load Rejection Test" as described in Regulatory Guide 1.9, Revision 3 have been combined. The "Full-Load Rejection Test" is a demonstration of the emergency diesel generator's capability to reject a load equal to 90 to 100 percent of its continuous rating (5580 to 6201 kilowatts) while operating at a power factor between 0.8 and 0.9 and that the voltage does not exceed 4784 volts and that the frequency does not exceed 65.4 Hertz following a load rejection of 5580 to 6201 kilowatts. The frequency criteria is from the "Single-Load Rejection Test" and is based on nominal engine speed plus 75 percent of the difference between nominal speed and the over-speed trip setpoint.

The note that will not allow a surveillance requirement to be performed in Modes 1 or 2 is based on the improved Standard Technical Specifications (NUREG-1431) which recognizes that the performance of certain surveillance requirements during operation with the reactor critical could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems.

A.C. SOURCES, D.C. SOURCES, AND ONSITE POWER DISTRIBUTION (Continued)

The Surveillance Requirement for demonstrating the OPERABILITY of the Station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," February 1978, and IEEE Std 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."

Verifying average electrolyte temperature above the minimum for which the battery was sized, total battery terminal voltage on float charge, connection resistance values and the performance of battery service and discharge tests ensures the effectiveness of the charging system, the ability to handle high discharge rates and compares the battery capacity at that time with the rated capacity.

Table 4.8-2 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage and specific gravity. The limits for the designated pilot cells float voltage and specific gravity, greater than 2.13 volts and 0.015 below the manufacturer's full charge specific gravity or a battery charger current that had stabilized at a low value, is characteristic of a charged cell with adequate capacity. The normal limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than 0.020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than 0.010 below the manufacturer's full charge specific gravity, ensures the OPERABILITY and capability of the battery.

Operation with a battery cell's parameter outside the normal limit but within the allowable value specified in Table 4.8-2 is permitted for up to 7 days. During this 7-day period: (1) the allowable values for electrolyte level ensures no physical damage to the plates with an adequate electron transfer capability; (2) the allowable value for the average specific gravity of all the cells, not more than 0.020 below the manufacturer's recommended full charge specific gravity, ensures that the decrease in rating will be less than the safety margin provided in sizing; (3) the allowable value for an individual cell's specific gravity, ensures that an individual cell's specific gravity will not be more than 0.040 below the manufacturer's full charge specific gravity and that the overall capability of the battery will be maintained within an acceptable limit; and (4) the allowable value for an individual cell's float voltage, greater than 2.07 volts, ensures the battery's capability to perform its design function.

PROCEDURES AND PROGRAMS (Continued)

8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,

9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,

10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

f. Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM.

2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and the modifications to the monitoring program are made if required by the results of this census, and

3) Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

g. Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil. The program shall include sampling and testing requirements, and acceptance criteria, based upon the applicable ASTM Standards. The purpose of the program is to establish the following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

1. an API gravity or an absolute specific gravity within limits,

2. a flash point within limits for ASTM 2D fuel oil,

3. a kinematic viscosity within limits for ASTM 2D fuel oil,

4. a water and sediment content within the limits for ASTM 2D fuel oil, and

5. a total particulate concentration of $\leq$ 10 mg/l;

b. Other properties for ASTM 2D fuel oil are within limits within 30 days following sampling and addition of new fuel oil to storage tanks.

PROCEDURES AND PROGRAMS (Continued)

h. Emergency Diesel Generator Reliability Program

An emergency diesel generator reliability program that establishes the requirements and guidelines for emergency diesel generator reliability, availability, and monitoring. The program shall include the following:

a. Emergency diesel generator reliability performance goals (target reliability) based upon the station blackout coping assessment. Target reliability goal monitoring is accomplished through monitoring methods that are based upon those described in Appendix D of NUMARC 87-00,

b. Measures to ensure detailed root cause analysis of emergency diesel generator failures is performed and effective corrective actions are taken in response to failures,

c. Implementation of an emergency diesel generator preventive maintenance program that is consistent with the Maintenance Rule, and

d. Monitoring of emergency diesel generator availability and performance parameters to ensure the target reliability is met or exceeded.

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Regional Administrator of the NRC Regional Office unless otherwise noted.