

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

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. Three separate and independent diesel generators, each with:
 1. A separate day fuel tank containing a minimum of 225 gallons of fuel for Div 1 and Div 2 and 204 gallons of fuel for Div 3,
 2. A separate fuel storage system containing a minimum of 73,700 gallons of fuel for Div 1 and Div 2 and 36,100 gallons of fuel for Div 3, and
 3. A separate fuel transfer pump.

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APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

- a. With one offsite circuit of the above required A.C. electrical power sources 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 8 hours thereafter. If either diesel generator Div 1 or Div 2 has not been successfully tested within the past 24 hours, demonstrate its OPERABILITY by performing Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 for each such diesel generator separately within 24 hours. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. With either diesel generator Div 1 or Div 2 inoperable, demonstrate the OPERABILITY of the above required 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. If the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generators by performing Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 separately for each diesel generator within 24 hours*;

*This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY. The provisions of Specification 3.0.2 are not applicable.

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ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

- f. With both of the above required offsite circuits inoperable, demonstrate the OPERABILITY of three diesel generators by performing Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 separately for each diesel generator within 8 hours unless the diesel generators are already operating; restore at least one of the above required offsite circuits to OPERABLE status within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours. With only one offsite circuit restored to OPERABLE status, restore at least two offsite circuits to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. A successful test(s) of diesel generator OPERABILITY per Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 performed under this ACTION statement for the OPERABLE diesel generators satisfies the diesel generator test requirements of ACTION a.
- g. With diesel generators Div 1 and Div 2 of the above required A.C. electrical power sources 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 and Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 for diesel generator Div 3 within 8 hours*. Restore at least one of the inoperable diesel generators Div 1 and Div 2 to OPERABLE status within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. Restore both diesel generators Div 1 and Div 2 to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- h. With one offsite circuit of the above required A.C. electrical power sources and diesel generator Div 3 inoperable, apply the requirements of ACTION a and d specified above.
- i. With either diesel generator Div 1 or Div 2 inoperable and diesel generator Div 3 inoperable, apply the requirements of ACTION b, d and e specified above.

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j. With the fuel oil contained in the storage tank not meeting the properties specified in TS 4.8.1.1.2.d.2 or 4.8.1.1.2.e the fuel oil shall be brought back within the specified limits within 7 days or the associated diesel generator shall be declared inoperable.

*This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY. The provisions of Specification 3.0.2 are not applicable.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

7. Verifying the pressure in all air start receivers for each diesel generator to be greater than or equal to 210 psig.

- 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 tank.
- c. At least once per 92 days by checking for and removing accumulated water from the fuel oil storage tanks.

d. At least once per 92 days and from new fuel oil prior to its addition to the storage tanks by verifying that a sample obtained in accordance with ASTM-D270-1975 meets the following minimum requirements in accordance with the tests specified in ASTM-D975-1977:

- 1) A water and sediment content of less than or equal to 0.05 volume percent;
- 2) A saybolt universal viscosity at 100°F of greater than or equal to 32.6 sus, but less than or equal to 40.1 sus;
- 3) An API gravity as specified by the manufacturer at 60°F of greater than or equal to 26 degrees, but less than or equal to 36 degrees;
- 4) An impurity level of less than 2 mg of insolubles per 100 ml when tested in accordance with ASTM-D2274-70; analysis shall be completed within 7 days after obtaining the sample but may be sampled and analyzed after the addition of new fuel oil; and
- 5) The other properties specified in Table 1 of ASTM-D975-1977 and Regulatory Guide 1.137, Revision 1, October 1979, Position 2.a., when tested in accordance with ASTM-D975-1977; analysis shall be completed within 14 days after obtaining the sample but may be sampled and analyzed after the addition of new fuel oil.

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At least once per 18 months*, ** during shutdown, by:

- 1. Subjecting the diesel to an inspection in accordance with instructions prepared in conjunction with its manufacturer's recommendations for this class of standby service.
- 2. Verifying the diesel generator capability to reject a load of greater than or equal to 1400 kw (LPCS pump) for diesel generator Div 1, greater than or equal to 729 kw (RHR B pump or RHR C pump) |

* For any start of a diesel, the diesel must be loaded in accordance with the manufacturer's recommendations.

**Except 4.8.1.1.2.e.1 to be performed every refueling outage, for the Div 1 and Div 2 diesel generators.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

to standby operation, and (2) automatically energizes the emergency loads with offsite power.

12. Verifying that each fuel transfer pump transfers fuel from the fuel storage tank to the day tank of each diesel.
13. Verifying that the automatic load sequence timers are OPERABLE with the interval between each load block within $\pm 10\%$ of its design interval for diesel generators Div 1 and Div 2.
14. Verifying that the following diesel generator lockout features prevent diesel generator starting only when required:
 - a. For diesel generators Div 1 and Div 2:
 - 1) Control room switch in pull-to-lock (with local/remote switch in remote).
 - 2) Local/remote switch in local
 - 3) Barring device engaged
 - 4) Inop/Normal switch in inop
 - b. For diesel generator Div 3:
 - 1) Emergency run/stop switch in stop
 - 2) Maintenance/auto/test switch in maintenance

At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting all three diesel generators simultaneously, during shutdown, and verifying that all three diesel generators accelerate to at least 441 rpm for diesel generators Div 1 and Div 2 and 882 rpm for diesel generator Div 3 in less than or equal to 10 seconds.

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 or equivalent solution, and
2. Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code in accordance with ASME Code Section 11 Article IWD-5000.

4.8.1.1.3 Reports - All diesel generator failures, valid or non-valid, shall be reported 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 of any diesel generator is greater than or equal to seven, 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.

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ELECTRICAL POWER SYSTEMSA.C. SOURCES - SHUTDOWNLIMITING 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. Diesel generator Div 1 or Div 2, and diesel generator Div 3 when the HPCS system is required to be OPERABLE, with each diesel generator having:
 1. A day tank containing a minimum of 225 gallons of fuel for Div 1 and Div 2 and 204 gallons of fuel for Div 3.
 2. A fuel storage system containing a minimum of 73,700 gallons of fuel for Div 1 and Div 2 and 36,100 gallons of fuel for Div 3.
 3. A fuel transfer pump.

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APPLICABILITY: OPERATIONAL CONDITIONS 4, 5 and *.

ACTION:

- a. With less than the offsite circuits and/or diesel generators Div 1 or Div 2 of the above required A.C. electrical power sources OPERABLE, suspend CORE ALTERATIONS, handling of irradiated fuel in the primary containment and Fuel Handling building, operations with a potential for draining the reactor vessel and crane operations over the spent fuel storage pool when fuel assemblies are therein. In addition, when in OPERATIONAL CONDITION 5 with the water level less than 22 feet 10 inches above the reactor pressure vessel flange, immediately initiate corrective action to restore the required power sources to OPERABLE status as soon as practical.
- b. With diesel generator Div 3 of the above required A.C. electrical power sources inoperable, restore the inoperable diesel generator Div 3 to OPERABLE status within 72 hours or declare the HPCS system inoperable and take the ACTION required by Specification 3.5.2 and 3.5.3.
- c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.8.1.2 At least the above required A.C. electrical power sources shall be demonstrated OPERABLE per Surveillance Requirements 4.8.1.1.1, 4.8.1.1.2 (except for the requirement of 4.8.1.1.2.a.5), and 4.8.1.1.3.

*When handling irradiated fuel in the Fuel Handling Building or primary containment.

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- d. By sampling new fuel oil in accordance with ASTM D4057-88 prior to the addition to the storage tank and:
- 1) By verifying 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 at 60 F of greater than or equal to 26 degrees but less than or equal to 39 degrees, when tested in accordance with ASTM D1298-88,
 - 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, when testing in accordance with the tests specified in ASTM D975-89, if gravity was not determined by comparison with the supplier's certification,
 - c) A flash point equal to or greater than 125 F, when tested in accordance with the tests specified in ASTM D975-89,
 - d) No visible free water or particulate contamination when tested in accordance with ASTM D4176-86.
 - 2) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-89 are met when tested in accordance with the tests specified in ASTM D975-89.
- e. At least once every 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-88, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-88.