

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

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 day fuel tank containing a minimum volume of 280 gallons of fuel (equivalent to 50% of indicated tank volume),
 2. A separate fuel storage system containing a minimum volume of 22,500 gallons of fuel (equivalent to 100% of indicated tank level), and
 3. A separate fuel transfer pump.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one offsite A.C. circuit of the above required A.C. electrical power sources inoperable, perform the following:
 1. Demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and
 2. Restore the offsite A.C. circuit 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. Startup Transformer No. 2 may be removed from service for up to 30 days as part of a preplanned preventative maintenance schedule. The 30-day allowance may be applied not more than once in a 10-year period. The provisions of Specification 3.0.4 are not applicable to Startup Transformer No. 2 during the 30-day preventative maintenance period.

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- b. With one diesel generator of the above required A.C. electrical power source inoperable, perform the following:
 - 1. Demonstrate the OPERABILITY of both the offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and
 - 2. Demonstrate the OPERABILITY of the remaining OPERABLE diesel generator within 24 hours by:
 - i. Determining the OPERABLE diesel generator is not inoperable due to a common cause failure, or
 - ii. Perform Surveillance Requirement 4.8.1.1.2.a.4 unless:
 - a. The remaining diesel generator is currently in operation, or
 - b. The remaining diesel generator has been demonstrated OPERABLE within the previous 24 hours, and
 - 3. Restore the diesel generator to OPERABLE status within 14 days (See Note 1) or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Note 1 - If the Alternate A.C. Diesel Generator (AACDG) is determined to be inoperable during this period, then a 72 hour restoration period is applicable until either the AACDG or the diesel generator is returned to operable status (not to exceed 14 days from the initial diesel generator inoperability).

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- c. With one offsite A.C. circuit and one diesel generator of the above required A.C. electrical power sources inoperable, perform the following:
 - 1. Demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and,
 - 2. If the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, then
 - i. Demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours except when:
 - a. The remaining diesel generator is currently in operation, or
 - b. The remaining diesel generator has been demonstrated OPERABLE within the previous 8 hours, and
 - 3. 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, and
 - 4. Restore the remaining inoperable A.C. Source to an OPERABLE status (Offsite A.C. Circuit within 72 hours or Diesel Generator with 14 days (see b.3, Note 1)) based on the time of the initiating event that caused the inoperability or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With two offsite A.C. circuits of the above required A.C. electrical power sources inoperable, perform the following:
 - 1. Perform Surveillance Requirement 4.8.1.1.2.a.4 on the diesel generators within the next 8 hours except when:
 - i. The diesel generators are currently in operation, or
 - ii. The diesel generators have been demonstrated OPERABLE within the previous 8 hours, and
 - 2. Restore one of the inoperable offsite A.C. circuits 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, and
 - 3. Restore both A.C. circuits within 72 hours of the initiating event or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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- e. With two diesel generators of the above required A.C. electrical power sources inoperable, perform the following:
 - 1. Demonstrate the OPERABILITY of the two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and
 - 2. 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, and
 - 3. Restore the remaining inoperable diesel generator within 14 days (see b.3, Note 1) of the initiating event or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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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: (Note 1)
- a. At least once per 31 days on a STAGGERED TEST BASIS by:
 1. Verifying the fuel level in the day fuel tank.
 2. Verifying the fuel level in the fuel storage tank.
 3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.
 4. Verifying the diesel starts from a standby condition and accelerates to at least 900 rpm in ≤ 15 seconds. (Note 2)
 5. Verifying the generator is synchronized, loaded to an indicated 2600 to 2850 Kw and operates for ≥ 60 minutes. (Notes 3 & 4)
 6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
 - b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank obtained in accordance with ASTM-D270-65, is within the acceptable limits specified in Table 1 of ASTM D975-74 when checked for viscosity, water and sediment.

Note 1

All planned diesel generator starts for the purposes of these surveillances may be preceded by prelube procedures.

Note 2

This diesel generator start from a standby condition in ≤ 15 sec. shall be accomplished at least once every 184 days. All other diesel generator starts for this surveillance may be in accordance with vendor recommendations.

Note 3

Diesel generator loading may be accomplished in accordance with vendor recommendations such as gradual loading.

Note 4

Momentary transients outside this load band due to changing loads will not invalidate the test. Load ranges are allowed to preclude over-loading the diesel generators.