

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)
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- c) Verifying that all nonessential automatic diesel generator trips (i.e., other than engine overspeed, lube oil pressure low, 4 KV bus differential and generator differential), are automatically bypassed upon loss of voltage on the vital bus concurrent with a safety injection actuation signal.

- 7. Verifying the diesel generator operates for at least 24 hours*. During the first 2 hours of this test, the diesel generator shall be loaded to 2760-2860 kw.** During the remaining 22 hours of this test, the diesel generator shall be loaded to 2500-2600 kw**. The steady state voltage and frequency shall be maintained at \pm 3950 and \pm 4580 volts and 60 ± 1.2 Hz during this test.

- 8. Verifying that the auto-connected loads to each diesel generator do not exceed the two hour rating of 2860 kw.

- 9. 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.

- e. At least once per ten years or after any modifications which could affect diesel generator interdependence by starting all diesel generators simultaneously*, during shutdown, and verifying that all diesel generators accelerate to at least 900 rpm in less than or equal to 10 seconds.

- f. At least once per 18 months, the following test shall be performed within 5 minutes of diesel shutdown after the diesel has operated for at least two hours at 2500-2600 kw**:

Replace with
INSERT D

Verifying the diesel starts and accelerates to 900 rpm in less than or equal to 10 seconds*. The generator voltage and frequency shall be \pm 3950 volts and \pm 4580 volts and 60 ± 1.2 Hz within 13 seconds after the start signal.

4.8.1.1.3 The diesel fuel oil storage and transfer system shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 - 1. Verifying the level in each of the above required fuel storage tanks.
 - 2. Verifying that both fuel transfer pumps can be started and transfer fuel from the fuel storage tanks to the day tanks

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3/4.8 ELECTRICAL POWER SYSTEMS
BASES

3/4.8.1 and 3/4.8.2 A.C. SOURCES AND ONSITE POWER DISTRIBUTION SYSTEMS

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 accident analyses and are based upon maintaining at least two independent sets 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 one onsite A.C. source.

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 is available for monitoring and maintaining the unit status.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are based upon the recommendations of Regulatory Guide 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," March 10, 1971, and Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977. Regulatory Guide 1.108 criteria for determining and reporting valid tests and failures, and accelerated diesel generator testing, have been superseded by implementation of the Maintenance Rule for the diesel generators per 10CFR50.65. In addition to the Surveillance Requirements of 4.8.1.1.2, diesel preventative maintenance is performed in accordance with procedures based on manufacturer's recommendations with consideration given to operating experience.

INSERT C

~~For the purposes of establishing initial conditions for surveillance testing, "ambient conditions" mean that the diesel lube oil temperature is 120 ± 20 degrees F. The minimum lube oil temperature for an OPERABLE diesel is 100 degrees F. Lube oil heaters are designed to maintain the oil temperature at approximately 120 degrees F.~~

Surveillance requirement 4.8.1.2 is modified by a Note. The reason for the Note is to preclude requiring the OPERABLE DG(s) from being paralleled with the offsite power network or otherwise rendered inoperable during performance of the surveillance requirement, and to preclude de-energizing a required ESF bus or disconnecting a required offsite circuit during performance of surveillance requirements. With limited AC sources available, a single event could compromise both the required circuit and the DG. It is the intent that

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

.....

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- 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 2760-2860 kw**. During the remaining 22 hours of this test, the diesel generator shall be loaded to 2500-2600 kw**. The steady state voltage and frequency shall be maintained at ≥ 3950 and ≤ 4580 volts and 60 ± 1.2 Hz during this test.

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- 9. 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.

- e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting all diesel generators simultaneously*, during shutdown, and verifying that all diesel generators accelerate to at least 900 rpm in less than or equal to 10 seconds.

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ELECTRICAL POWER SYSTEMS

BASES

3/4.8.1 and 3/4.8.2 - A.C. SOURCES AND ONSITE POWER DISTRIBUTION SYSTEMS

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 accident analyses and are based upon maintaining at least two independent sets 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 one onsite A.C. source.

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 is available for monitoring and maintaining the unit status.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are based upon the recommendations of Regulatory Guide 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," March 10, 1971, and Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977. Regulatory Guide 1.108 criteria for determining and reporting valid tests and failures, and accelerated diesel generator testing, have been superseded by implementation of the Maintenance Rule for the diesel generators per 10CFR50.65. In addition to the Surveillance Requirements of 4.8.1.1.2, diesel preventative maintenance is performed in accordance with procedures based on manufacturer's recommendations with consideration given to operating experience.

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Surveillance requirement 4.8.1.2 is modified by a Note. The reason for the Note is to preclude requiring the OPERABLE DG(s) from being paralleled with the offsite power network or otherwise rendered inoperable during performance of the surveillance requirement, and to preclude de-energizing a required ESF bus or disconnecting a required offsite circuit during performance of surveillance requirements. With limited AC sources available, a single event could compromise both the required circuit and the DG. It is the intent that