

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each EDG shall be demonstrated OPERABLE:

- a. ^{At least once per 31 days} ~~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 and fuel storage tank.
 2. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.
 3. Verifying the diesel generator can start* and accelerate to synchronous speed (504 rpm) with generator voltage and frequency at 7200 ± 720 volts and 60 ± 1.2 Hz.
 4. Verifying the generator is synchronized, gradually loaded* to an indicated 4150-4250 kW** and operates for at least 60 minutes.
- 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 removing accumulated water from the day tank.
- c. At least once per 31 days by checking for and removing accumulated water from the fuel oil storage tanks;
- d. By sampling new fuel oil in accordance with the applicable ASTM standard prior to addition to storage tanks and:
1. By verifying in accordance with the tests specified in the applicable ASTM standard 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 of 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6, but not less than or equal to 40.1), if gravity was not determined by comparison with the supplier's certification;

* This test shall be conducted in accordance with the manufacturer's recommendations regarding engine pre-lube and warmup procedures, and as applicable regarding loading recommendations.

** This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band shall not invalidate the test.

SUMMER - UNIT 1

3/4 8-3

Amendment No. ~~87~~ ~~73~~ ~~121~~

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer, and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization of these loads, the steady-state voltage and frequency shall be maintained at 7200 ± 720 volts and 60 ± 1.2 Hz.

- h. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting the diesel generators simultaneously, during shutdown, and verifying that the diesel generators accelerate to at least 504 rpm in less than or equal to 10 seconds.
- 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 its equivalent, 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 at a test pressure equal to 110 percent of the system design pressure.

Delete

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

TABLE 4.8-1
DIESEL GENERATOR TEST SCHEDULE

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

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

For the purposes of determining the required test frequency, the previous test failure count may be reduced to zero if, in conjunction with the manufacturer a complete diesel overhaul to like-new conditions is completed, and if acceptable reliability has been demonstrated. The reliability criterion shall be the successful completion of 14 consecutive tests in a single series. Ten of these tests shall be in accordance with Surveillance Requirement 4.8.1.1.2.a.3 and 4.8.1.1.2.a.4; four tests, in accordance with Surveillance Requirement 4.8.1.1.2.f. If this criterion is not satisfied during the first series of tests, any alternate criterion to be used to transvalue the failure count to zero requires NRC approval.

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

Delete

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 fuel tank containing a minimum volume of 300 gallons of fuel,
 2. A fuel storage system containing a minimum volume of 33,200 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 fuel storage 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 Surveillance Requirements of 4.8.1.1.1, 4.8.1.1.2 (with the exception of 4.8.1.1.2.a.4), and ~~4.8.1.1.3.~~

*ESF load sequencer may be deenergized in Modes 5 and 6 provided that the loss of voltage and degraded voltage relays are disabled.

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

3/4.8.1, 3/4.8.2 AND 3/4.8.3 A.C. SOURCES, D.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 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. 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 is available for monitoring and maintaining the unit status.

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," March 10, 1971, ~~1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977,~~ and 1.137, "Fuel-Oil Systems for Standby Diesel Generators," Revision 1, October 1979, as modified by the NRC's review and approval of South Carolina Electric & Gas Company's June 10, 1985 and December 6, 1985 amendment requests.

The fuel storage system minimum volume of fuel to demonstrate operability of the diesel generators was based on fuel consumption determined from time dependent loads following a design basis accident and a loss of off-site power as listed in FSAR Table 8.3-3 for seven days plus a 10% fuel margin as recommended in Regulatory Guide 1.137, "Fuel-Oil Systems for Standby Diesel Generators," position C.1.C(2).

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- 4.8.1.1.2 Each EDG 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 and fuel storage tank.
 2. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.
 3. Verifying the diesel generator can start* and accelerate to synchronous speed (504 rpm) with generator voltage and frequency at 7200 ± 720 volts and 60 ± 1.2 Hz.
 4. Verifying the generator is synchronized, gradually loaded* to an indicated 4150-4250 kW** and operates for at least 60 minutes.
 - 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 removing accumulated water from the day tank.
 - c. At least once per 31 days by checking for and removing accumulated water from the fuel oil storage tanks.
 - d. By sampling new fuel oil in accordance with the applicable ASTM standard prior to addition to storage tanks and:
 1. By verifying in accordance with the tests specified in the applicable ASTM standard 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 of 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes (alternatively Saybolt viscosity, SUS at 100°F of greater than or equal to 32.8, but not less than or equal to 40.1), if gravity was not determined by comparison with the supplier's certification.

*This test shall be conducted in accordance with the manufacturer's recommendations regarding engine pre-lube and warm-up procedures, and as applicable regarding loading recommendations.

** This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band shall not invalidate the test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer, and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization of these loads, the steady-state voltage and frequency shall be maintained at 7200 ± 720 volts and 60 ± 1.2 Hz.

- h. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting the diesel generators simultaneously, during shutdown, and verifying that the diesel generators accelerate to at least 504 rpm in less than or equal to 10 seconds.
- 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 its equivalent, 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 at a test pressure equal to 110 percent of the system design pressure.

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(Table 4.8-1 was deleted)

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 fuel tank containing a minimum volume of 300 gallons of fuel,
 2. A fuel storage system containing a minimum volume of 33,200 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 fuel storage 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 Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 (with the exception of 4.8.1.1.2.a.4).

* ESF load sequencer may be deenergized in Modes 5 and 6 provided that the loss of voltage and degraded voltage relays are disabled.

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

3/4.8.1, 3/4.8.2, AND 3/4.8.3 A.C. SOURCES, D.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 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. 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 is available for monitoring and maintaining the unit status.

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," March 10, 1971, and 1.137, "Fuel-Oil Systems for Standby Diesel Generators," Revision 1, October 1979, as modified by the NRC's review and approval of South Carolina Electric & Gas Company's June 10, 1985 and December 6, 1985 amendment requests.

The fuel storage system minimum volume of fuel to demonstrate operability of the diesel generators was based on fuel consumption determined from time dependent loads following a design basis accident and a loss of off-site power as listed in FSAR Table 8.3-3 for seven days plus a 10% fuel margin as recommended in Regulatory Guide 1.137, Revision 2, "Fuel-Oil Systems for Standby Diesel Generators," position C.1.C(2).

SAFETY EVALUATION
FOR REMOVAL OF TABLE 4.8-1
DIESEL GENERATOR TEST SCHEDULE
FROM THE VIRGIL C. SUMMER NUCLEAR STATION
TECHNICAL SPECIFICATIONS

Description of Amendment Request

SCE&G proposes to change the current VCSNS Technical Specifications (TS) so that the requirements for accelerated testing and special reporting are removed. This follows implementation of the required maintenance program for monitoring and maintaining diesel generator performance consistent with the provisions of 10CFR50.65 and the guidance as applicable to diesel generators of RG 1.160. Specifically, these changes to the applicable diesel generator Technical Specifications are proposed: 1) SR 4.8.1.1.2.a specified frequency is changed to 31 days; 2) SR 4.8.1.1.3 Reports section is deleted; 3) Table 4.8-1 "Diesel Generator Test Schedule" is deleted; 4) SR 4.8.1.2 reference to 4.8.1.1.3 is removed; and; 5) Bases Page 3/4 8.1 deleting reference to RG 1.108.. This is consistent with the guidance provided by NRC GL 94-01.

Safety Evaluation

Generic Letter (GL) 94-01 advises licensees that they may request a license amendment to remove accelerated testing and special reporting requirements for the Emergency Diesel Generators (EDGs) from their Technical Specifications. The basis for the change is that the licensee must implement a maintenance program for monitoring and maintaining diesel generator performance consistent with the provisions of Section 50.65 of the Code of Federal Regulations (10CFR50.65) and the guidance as applicable to diesel generators of NRC Regulatory Guide (RG) 1.160.

The maintenance rule provides an acceptable method for monitoring the effectiveness of Diesel Generator maintenance. The elements of this program include the performance of detailed root cause analysis of individual EDG failures, effective corrective actions taken in response to individual EDG failures, and implementation of EDG preventive maintenance consistent with the maintenance rule.

SCE&G will continue to comply with the provisions of 10CFR50.72 and 50.73 to notify the NRC and report significant EDG failures consistent with failures of other plant systems, structures, and components. Since SCE&G is required to have a performance monitoring program under 10CFR50.65 and provide for operability and

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reportability determinations under 10CFR50.72 and 50.73, there is no need to have additional requirements in the Technical Specifications.

The changes proposed in this amendment request are consistent with the guidance provided by NRC GL 94-01.

NO SIGNIFICANT HAZARDS EVALUATION
FOR REMOVAL OF TABLE 4.8-1
DIESEL GENERATOR TEST SCHEDULE
FROM THE VIRGIL C. SUMMER NUCLEAR STATION
TECHNICAL SPECIFICATIONS

Description of Amendment Request

SCE&G proposes to change the current VCSNS Technical Specifications (TS) so that the requirements for accelerated testing and special reporting are removed. This follows implementation of the required maintenance program for monitoring and maintaining diesel generator performance consistent with the provisions of 10CFR50.65 and the guidance as applicable to diesel generators of RG 1.160. Specifically, these changes to the applicable diesel generator Technical Specifications are proposed: 1) SR 4.8.1.1.2.a specified frequency is changed to 31 days; 2) SR 4.8.1.1.3 Reports section is deleted; 3) Table 4.8-1 "Diesel Generator Test Schedule" is deleted; 4) SR 4.8.1.2 reference to 4.8.1.1.3 is removed; and; 5) Bases Page 3/4 8.1 deleting reference to RG 1.108.. This is consistent with the guidance provided by NRC GL 94-01.

Basis for No Significant Hazards Consideration Determination

In accordance with 10CFR50.92, a proposed change to the operating license involves no "significant hazards" if operation of the facility, in accordance with the proposed change, would not: 1) involve a significant increase in the probability or consequences of any accident previously evaluated; 2) create the possibility of a new or different kind of accident from previously evaluated, or; 3) involve a significant reduction in a margin to safety.

This request is evaluated against each of these criteria as follows:

1. *This request does not involve a significant increase in the probability or consequences of an accident previously evaluated.*

This change will provide flexibility to structure the emergency diesel generator maintenance program based on the risk significance of the structures, systems, and components that are within the scope of the maintenance rule. The removal of the diesel generator accelerated testing is acceptable as the maintenance rule applies system and train

specific performance criteria to monitor diesel generator performance. These criteria include a running availability and reliability measure. The performance criteria for the diesel generator reliability and unavailability established by the maintenance rule, and the causal determinations and corrective actions required for functional failures and/or exceeding performance criteria, is considered to be an acceptable method for monitoring diesel generator performance.

As the diesel generator performance will continued to be assured by the maintenance rule, the proposed changes do not affect any of the initiators for an accident previously evaluated. The changes do not impact the diesel's design sources, operating characteristics, system functions, or system interrelationships. The failure mechanisms for the accidents previously analyzed are not affected, and no additional failure modes are created that could cause an accident previously evaluated. Since the changes are administrative in nature, and the diesel generator performance and reliability will continue to be assured by the maintenance rule, the proposed changes cannot involve a significant increase in the probability or consequences of an accident previously evaluated.

2. *This request does not create the possibility of a new or different kind of accident from any accident previously evaluated.*

This proposed change does not involve a change to the plant design or operation. As a result, the proposed change does not affect any of the parameters or conditions that could contribute to the initiation of any accidents. The proposed changes only affect the methods used to monitor and assure diesel generator performance. The performance criteria for both the diesel generator reliability and unavailability established by the maintenance rule, and the causal determinations and corrective actions required for functional failures and/or exceeding performance criteria, is considered by GL 94-01 to be an acceptable method for monitoring diesel generator performance.

No SSC, method of operating, or system interface is altered by this change. The changes do not impact the diesel's design sources, operating characteristics, system functions, or system interrelationships. The failure mechanisms for the accidents are not affected, and no additional failure modes are created. Because the proposed changes are administrative in nature, and the diesel generator performance and

reliability will continue to be assured by the maintenance rule, the proposed changes cannot create the possibility of a new or different kind of accident from any accident previously evaluated.

3. *This request does not involve a significant reduction in a margin to safety*

The proposed changes only affect the methods used to monitor and assure diesel generator performance. The performance criteria for both the diesel generator reliability and unavailability established by the maintenance rule, and the causal determinations and corrective actions required for functional failures and/or exceeding performance criteria, is considered by GL 94-01 to be an acceptable method for monitoring diesel generator performance. No margin to safety as defined in the basis for any technical specification is impacted by these changes. This change does not impact any uncertainty in the design, construction, or operation of any SSC. Diesel generator response to accident initiators is unchanged. No SSC, method of operating, or system interface is altered by this change. The changes do not impact the diesel's design sources, operating characteristics, system functions, or system interrelationships. Because the proposed changes are administrative in nature, and the diesel generator performance and reliability will continue to be assured by the maintenance rule, the proposed changes cannot involve a significant reduction in the margin to safety.

Environmental Impact Consideration

SCE&G has reviewed this request against the criteria of 10CFR51.22 for environmental considerations. Since this request involves (i) no significant hazard consideration, (ii) no significant change in the types or significant increase in the amounts of any effluents that may be released offsite, and (iii) no significant increase in individual or cumulative occupational radiation exposure, SCE&G has concluded that the proposed change meets the criteria given in 10CFR51.22 (c)(9) for a categorical exclusion from the requirement for an environmental impact statement.