

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

4.8.1.1.2 (Continued)

c. At least once per 184 days the diesel generator shall be started** and accelerated to at least 900 rpm in less than or equal to 10 seconds. The generator voltage and frequency shall be 4160 ± 420 volts and 60 ± 1.2 Hz within 10 seconds after the start signal. The generator shall be manually synchronized to its appropriate emergency bus, gradually loaded** to an indicated 2500 to 2600 kw***, and operated for at least 60 minutes. The diesel generator shall be started for this test by using one of the following signals on a rotating test bus:

- a) Simulated loss of offsite power by itself.
- b) Simulated loss of offsite power in conjunction with an ESF actuation test signal.
- c) An ESF actuation test signal by itself.

This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.4, may also serve to concurrently meet those requirements as well.

d. 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 that, on rejection of a load of greater than or equal to 610 kw the voltage and frequency are maintained with 4160 ± 420 volts and 60 ± 1.2 Hz.
3. Verifying that the load sequencing timers are OPERABLE with times within the tolerances shown in Table 4.8-1.

* These surveillances may be satisfied by at-power testing (Modes 1 or 2) performed in accordance with other applicable surveillance requirements if performance at power does not jeopardize emergency bus OPERABILITY or continued stable plant operation.

** This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube 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 for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, one of the following trains of 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 450 gallons of fuel;
 2. A fuel storage system consisting of two underground storage tanks each containing a minimum volume of 45,000 gallons of fuel (This is a shared system with Unit 2), and
 3. A fuel transfer system.

APPLICABILITY:

- a. Modes 5 and 6
- b. During movement of irradiated fuel assemblies or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.

ACTION:

- a. 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 assemblies, and movement of loads over irradiated fuel assemblies until the minimum required A.C. electrical power sources are restored to OPERABLE status.
- b. With one underground fuel oil storage tank of 3.8.1.2.b.2 inoperable for the performance of Surveillance Requirement 4.8.1.1.4 or for tank repairs:
 1. Verify 45,000 gallons of fuel is available in the operable underground fuel oil storage tank at least once per 12 hours,
 2. Verify a minimum of 100,000 gallons of fuel oil is maintained in the above ground main fuel oil storage tank at least once per 12 hours,
 3. Verify an available source of fuel oil and transportation to supply 50,000 gallons of fuel in less than a 48 hour period, and
 4. Restore the storage tank to OPERABLE status within 7 days or place both Units in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours, and perform ACTION a. above.

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, 4.8.1.1.3, and 4.8.1.1.4.

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

3/4.8.1 and 3/4.8.2 A.C. and D.C. POWER SOURCES AND 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 Criteria 17 of Appendix "A" to 10 CFR 50.

For each EDG, the fuel oil transfer system shall be capable of automatically transferring fuel oil to the associated EDG day tank in sufficient quantities to maintain adequate day tank level to support full load operation of the EDG.

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 one of each of the 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 ACTION requirements specified in Modes 5 and 6 address the condition where sufficient power is unavailable to recover from postulated events (i.e., fuel handling accident). Implementation of the ACTION requirements shall not preclude completion of actions to establish a safe conservative plant condition. Completion of the requirements will prevent the occurrence of postulated events for which mitigating actions would be required.

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, 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and 3) sufficient power is available for systems necessary to recover from postulated events in these MODES, e.g., a fuel handling accident.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guide 1.9 "Selection of Diesel Generator Set Capacity for Standby Power Supplies," March 10, 1971, and 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. 48 issued August 22, 1986.

The Surveillance Requirements for demonstrating the OPERABILITY of the Emergency Diesel Generator batteries and the Station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance, Testing and Replacement of Large Lead Storage Batteries

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

3/4.8.1 and 3/4.8.2 A.C. and D.C. POWER SOURCES AND DISTRIBUTION (Continued)

The Surveillance Requirements for demonstrating the OPERABILITY of the Emergency Diesel Generator batteries and 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," as modified by Amendment No. 97 issued March 25, 1988.

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:
 1. Each with a separate day tank containing a minimum of 450 gallons of fuel, and
 2. A fuel storage system consisting of two underground storage tanks each containing a minimum of 45,000 gallons of fuel (This is a shared system with Unit 1), and
 3. A separate fuel transfer system.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one offsite circuit of 3.8.1.1.a 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. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the A.C. offsite power sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. If the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours*, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated. Restore the 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.

* This action is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

4.8.1.1.2 (Continued)

The generator shall be manually synchronized to its appropriate emergency bus, gradually loaded** to an indicated 2500 to 2600 kw***, and operated for at least 60 minutes. The diesel generator shall be started for this test by using one of the following signals on a rotating test basis:

- a) Simulated loss of offsite power by itself.
- b) Simulated loss of offsite power in conjunction with an ESF actuation test signal.
- c) An ESF actuation test signal by itself.

This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.4, may also serve to concurrently meet those requirements as well.

- d. 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 that, on rejection of a load of greater than or equal to 610 kw the voltage and frequency are maintained with 4160 ± 420 volts and 60 ± 1.2 Hz.
 3. Verifying that the load sequencing timers are OPERABLE with times within the tolerances shown in Table 4.8-1.
 4. Simulating a loss of offsite power by itself, and:
 - a) Verifying de-energization 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 10 seconds, energizes the auto-connected shutdown loads through the sequencing timers 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 4160 ± 420 volts and 60 ± 1.2 Hz.

* These surveillances may be satisfied by at-power testing (Modes 1 or 2) performed in accordance with other applicable surveillance requirements if performance at power does not jeopardize emergency bus OPERABILITY or continued stable plant operation.

** This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelude 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 for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, one of the following trains of 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 450 gallons of fuel;
 2. A fuel storage system consisting of two underground storage tanks each containing a minimum volume of 45,000 gallons of fuel (This is a shared system with Unit 1), and
 3. A fuel transfer system.

APPLICABILITY:

- a. Modes 5 and 6
- b. During movement of irradiated fuel assemblies or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.

ACTION:

- a. 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 assemblies, and movement of loads over irradiated fuel assemblies until the minimum required A.C. electrical power sources are restored to OPERABLE status.
- b. With one underground fuel oil storage tank of 3.8.1.2.b.2 inoperable for the performance of Surveillance Requirement 4.8.1.1.4 or for tank repairs:
 1. Verify 45,000 gallons of fuel is available in the operable underground fuel oil storage tank at least once per 12 hours,
 2. Verify a minimum of 100,000 gallons of fuel oil is maintained in the above ground main fuel oil storage tank at least once per 12 hours,
 3. Verify an available source of fuel oil and transportation to supply 50,000 gallons of fuel in less than a 48 hour period, and
 4. Restore the storage tank to OPERABLE status within 7 days or place both Units in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours, and perform ACTION a. above.

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, 4.8.1.1.3, and 4.8.1.1.4.

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

3/4.8.1 and 3/4.8.2 A.C. and D.C. POWER SOURCES AND 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 Criteria 17 of Appendix "A" to 10 CFR 50.

For each EDG, the fuel oil transfer system shall be capable of automatically transferring fuel oil to the associated EDG day tank in sufficient quantities to maintain adequate day tank level to support full load operation of the EDG.

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 one of each of the 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 ACTION requirements specified in Modes 5 and 6 address the condition where sufficient power is unavailable to recover from postulated events (i.e., fuel handling accident). Implementation of the ACTION requirements shall not preclude completion of actions to establish a safe conservative plant condition. Completion of the requirements will prevent the occurrence of postulated events for which mitigating actions would be required.

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, 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and 3) sufficient power is available for systems necessary to recover from postulated events in these MODES, e.g., a fuel handling accident.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guide 1.9 "Selection of Diesel Generator Set Capacity for Standby Power Supplies," March 10, 1971, and 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. 83 issued August 22, 1986.

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

3/4.8.1 and 3/4.8.2 A.C. and D.C. POWER SOURCES AND DISTRIBUTION (Continued)

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," as modified by Amendment No. 84 issued March 25, 1988.

Containment electrical penetration and penetration conductors are protected by either de-energizing circuits not required during reactor operation or by demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers during period surveillance.

The surveillance frequency applicable to molded case circuit breakers and/or buses provides assurance of breaker and/or fuse reliability by testing at least one representative sample of each manufacturer's brand of circuit breaker and/or fuse. Each manufacturer's molded case circuit breakers and/or fuses are grouped into representative samples which are then tested on a rotating basis to ensure that all breakers and/or fuses are tested. If a wide variety exists within any manufacturer's brand of molded case circuit breakers and/or fuses, it is necessary to divide that manufacturer's breakers and/or fuses into groups and treat each group as a separate type of breaker or fuse for surveillance purposes.

The OPERABILITY of the motor-operated valves thermal and overload protection and/or bypass devices ensures that these devices will not prevent safety-related valves from performing their function. The Surveillance Requirements for demonstrating the OPERABILITY of these devices are in accordance with Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor-Operated Valves," Revision 1, March 1977.

Attachment 3

Significant Hazards Consideration

SIGNIFICANT HAZARDS CONSIDERATION

Pursuant to 10 CFR 50.90, Virginia Electric and Power Company requests changes to Technical Specifications 3/4.8.1.1 and 3/4.8.1.2 for North Anna Power Station Units 1 and 2. These proposed Technical Specification changes would revise the current minimum Emergency Diesel Generator (EDG) fuel oil day tank volume and EDG surveillance requirements:

- North Anna Technical Specifications require that the EDG day tank contain a minimum of 750 gallons of fuel oil. The proposed change will revise the minimum volume from 750 to 450 gallons because Technical Specification compliance issues arise due to the inability of the fuel oil transfer system to automatically maintain the day tank level above 750 gallons during EDG operation without operator intervention. The proposed change will also clarify in the applicable Technical Specifications Bases that the fuel oil transfer system is capable of automatically transferring fuel oil from the underground storage tanks to the EDG day tanks.
- North Anna Technical Specifications require that each EDG be demonstrated operable by the performance of listed surveillance requirements, certain of which are required to be performed with the unit shut down. The proposed change will allow credit to be taken for surveillance testing performed while the unit is at power to satisfy portions of those surveillance requirements required during shutdown.

The proposed changes do not involve physical modifications to the plant or modifications in the methods of plant operation which would cause an accident or event of a different type than previously analyzed. The ability of the EDGs to perform their intended safety function is not affected by the proposed changes. The accident analyses assumptions are not affected by the proposed changes. The margin of safety for the various design basis accidents is unaffected by the proposed changes. Therefore, the proposed changes do not result in an unreviewed safety question or a significant hazards consideration.

Virginia Electric and Power Company has reviewed the proposed changes against the criteria of 10 CFR 50.92 and has concluded that the changes as proposed do not pose a significant hazards consideration. Specifically, operation of North Anna Power Station in accordance with the proposed Technical Specification changes will not:

1. Involve a significant increase in the probability of occurrence of an accident previously evaluated.

The proposed changes do not result in any physical modifications to any plant systems or components nor change the operation of any plant equipment. The EDG fuel oil supply system will continue to provide adequate fuel supply to the EDGs in a manner consistent with applicable accident analyses. Performing surveillance tests or portions of surveillance tests at power that do not jeopardize stable plant operations does not increase the probability of occurrence of previously analyzed accidents.

Therefore, there is no increase in the probability of occurrence of any accident.

2. Significantly increase the consequences of an accident previously evaluated.

The proposed changes do not result in any physical modifications to any plant systems or components nor change the operation of any plant equipment. The EDG fuel oil system remains capable of supplying the EDGs with sufficient quantities of fuel oil to provide power for long term loss of offsite power. The EDG surveillances will continue to be performed in a manner that will ensure that the EDGs will be capable of performing their intended safety functions. The proposed changes to the electrical distribution system surveillances will continue to ensure that the electrical distribution system remains operable to power the required safety systems.

Therefore, these proposed changes will not result in an increase in the consequences of any evaluated accidents.

3. Create the possibility for a new or different type of accident than was previously evaluated.

The proposed changes do not result in any physical modifications to any plant systems or components nor change the operation of any plant equipment. Only those

surveillance tests or portions of surveillance tests that do not jeopardize stable plant operation will be performed at power. Overlap testing to fully test the electrical distribution system protection functions does not introduce any unique accident precursors. The EDG fuel oil system remains capable of supplying the EDGs with sufficient quantities of fuel oil to provide power for long term loss of offsite power. The EDG surveillances will continue to be performed in a manner that will ensure that the EDGs will be capable of performing their intended safety functions.

Therefore, there are no new precursors generated that would result in the possibility of a different type of an accident than was previously evaluated in the SAR.

4. Involve a significant reduction in a margin of safety.

The EDG fuel oil system will continue to provide adequate fuel supply in a manner consistent with applicable accident analyses. The EDG surveillances will continue to be performed in a manner that will ensure that the EDGs are capable of performing their intended safety functions. The proposed changes to the electrical distribution system surveillances will continue to ensure that the electrical distribution system remains operable to power the required safety systems.

Therefore, the margin of safety is not reduced.

Virginia Electric and Power Company concludes that the activities associated with these proposed Technical Specification changes satisfy the no significant hazards consideration of the criteria of 10 CFR 50.92 and, accordingly, a no significant hazards consideration finding is justified.