

REACTIVITY CONTROL SYSTEMS
SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 31 days by:
 - 1. Verifying the continuity of the explosive charge.
 - 2. Determining that the concentration of boron in solution is within the limits of Figure 3.1.5-1 by chemical analysis.*
 - 3. Verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- c. Demonstrating that, when tested pursuant to Specification 4.0.5, the minimum flow requirement of 41.2 gpm at a pressure of greater than or equal to 1215 psig is met.
- d. At least once per 18 months by:
 - 1. Initiating one of the standby liquid control system loops, including an explosive valve, and verifying that a flow path from the pumps to the reactor pressure vessel is available by pumping demineralized water into the reactor vessel. The replacement charge for the explosive valve shall be from the same manufactured batch as the one fired or from another batch which has been certified by having one charge of that batch successfully fired. Both injection loops shall be tested in 36 months.
 - 2. Demonstrating that the pump relief valve setpoint is less than or equal to 1400 psig and verifying that the relief valve does not actuate during recirculation to the test tank.
 - 3. Demonstrating that all piping between the storage tank and the explosive valves is unblocked by pumping from the storage tank to the test tank and then draining and flushing the piping with demineralized water.**
 - 4. Demonstrating that the storage tank heaters are OPERABLE for mixing by verifying the expected temperature rise of the sodium pentaborate solution in the storage tank after the heaters are energized.
- e. At least once per 18 months sample and analyze the sodium pentaborate solution to verify that the Boron-10 Isotope enrichment exceeds 65 atom percent.

*This test shall also be performed anytime water or boron is added to the solution or when the solution temperature drops below the 48°F limit.

**This test shall also be performed whenever the solution temperature drops below the 48°F limit and may be performed by any series of sequential, overlapping or total flow path steps such that the entire flow path is included.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.7.1.2 The emergency equipment cooling water system shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. At least once per 18 months by verifying that each automatic valve servicing nonsafety-related equipment actuates to its isolation position and the associated EECW pump automatically starts on an automatic actuation test signal.

PLANT SYSTEMS

EMERGENCY EQUIPMENT SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.3 Two independent emergency equipment service water (EESW) system subsystems shall be OPERABLE with each subsystem comprised of:

- a. One OPERABLE emergency equipment service water pump, and
- b. An OPERABLE flow path capable of taking suction from the associated ultimate heat sink and transferring the water through the associated EECW heat exchanger.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, and 5.

ACTION:

With one EESW system subsystem inoperable, declare the associated EECW system subsystem inoperable and take the ACTION required by Specification 3.7.1.2.

SURVEILLANCE REQUIREMENTS

4.7.1.3 The emergency equipment service water system shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. At least once per 18 months by verifying the EESW pump automatically starts upon receipt of an actuation test signal.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. By removing accumulated water:
 - 1. From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and
 - 2. From the storage tank at least once per 31 days.
- c. By sampling new fuel oil in accordance with ASTM D4057-81 prior to addition to the storage tanks and:
 - 1. By verifying in accordance with the tests specified in ASTM D975-81 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 27 degrees but less than or equal to 39 degrees.
 - 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, if gravity was not determined by comparison with the supplier's certification.
 - c) A flash point equal to or greater than 125°F, and
 - d) A clear and bright appearance with proper color when tested in accordance with ASTM D4176-82.
 - 2. By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are met when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D1552-79 or ASTM D2622-82.
- d. At least once every 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-78, and verifying that total particulate contamination is less than 10 mg/liter when checked in accordance with ASTM D2276-78, Method A.
- e. At least once per 18 months 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.

ELECTRICAL POWER SYSTEMS
SURVEILLANCE REQUIREMENTS (Continued)

2. There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150×10^{-6} ohm, and
 3. The average electrolyte temperature of ten of the connected cells is above 60°F.
- c. At least once per 18 months by verifying that:
1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration,
 2. The cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anticorrosion material,
 3. The resistance of each cell-to-cell and terminal connection is less than or equal to 150×10^{-6} ohm, and
 4. The battery charger will supply at least 100 amperes at a minimum of 129 volts for at least 4 hours.
- d. At least once per 18 months by verifying that either:
1. The battery capacity is adequate to supply and maintain in OPERABLE status all of the actual emergency loads for the design duty cycle (4 hours) when the battery is subjected to a battery service test, or
 2. The battery capacity is adequate to supply a dummy load of the following profile while maintaining the battery terminal voltage greater than or equal to 105 or 210 volts, as applicable:
 - a) Batteries 2PA and 2PB greater than or equal to 710 amperes during the initial 6 seconds of the test.
 - b) Batteries 2PA and 2PB greater than 182 amperes during the next 42 seconds of the test.
 - c) Batteries 2PA and 2PB greater than or equal to 54 amperes during the next 4 hours of the test.
 - d) Batteries 2PA and 2PB greater than or equal to 480 amperes during the last 6 seconds of the test.
- e. At least once per 60 months during shutdown by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. At this once per 60-month interval, this performance discharge test may be performed in lieu of the battery service test.
- f. At least once per 18 months performance discharge tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

3/4.0 APPLICABILITY

BASES (Con't)

When a shutdown is required to comply with ACTION requirements, the provisions of Specification 3.0.4 do not apply because they would delay placing the facility in a lower CONDITION of operation.

Specifications 4.0.1 through 4.0.5 establish the general requirements applicable to Surveillance Requirements. These requirements are based on the Surveillance Requirements stated in the Code of Federal Regulations, 10 CFR 50.36(c)(3):

"Surveillance requirements are requirements relating to test, calibration, or inspection to ensure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions of operation will be met."

Specification 4.0.1 establishes the requirement that surveillances must be performed during the OPERATIONAL CONDITIONS or other conditions for which the requirements of the Limiting Conditions for Operation apply unless otherwise stated in an individual Surveillance Requirement. The purpose of this specification is to ensure that surveillances are performed to verify the operational status of systems and components and that parameters are within specified limits to ensure safe operation of the facility when the plant is in an OPERATIONAL CONDITION or other specified condition for which the individual Limiting Conditions for Operation are applicable. Surveillance Requirements do not have to be performed when the facility is in an OPERATIONAL CONDITION for which the requirements of the associated Limiting Condition for Operation do not apply unless otherwise specified. The Surveillance Requirements associated with a Special Test Exception are only applicable when the Special Test Exception is used as an allowable exception to the requirements of a specification.

Specification 4.0.2 establishes the limit for which the specified time interval for Surveillance Requirements may be extended. It permits an allowable extension of the normal surveillance interval to facilitate surveillance scheduling and consideration of plant operating conditions that may not be suitable for conducting the surveillance; e.g., transient conditions or other ongoing surveillance or maintenance activities. It also provides flexibility to accommodate the length of a fuel cycle for surveillances that are specified with an 18-month surveillance interval. It is not intended that this provision be used repeatedly as a convenience to extend surveillance intervals beyond that specified for surveillances that are not performed once each fuel cycle. Likewise, it is not the intent that surveillances with an 18-month interval be performed during power operation unless it is consistent with safe plant operation. The limitation of Specification 4.0.2 is based on engineering judgement and the recognition that the most probable result of any particular surveillance being performed is the verification of conformance with the Surveillance Requirements. This provision is sufficient to ensure that the reliability ensured through surveillance activities is not significantly degraded beyond that obtained from the specified surveillance interval.

Specification 4.0.3 establishes the failure to perform a Surveillance Requirement within the allowed surveillance interval, defined by the provisions of Specification 4.0.2, as a condition that constitutes a failure