

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

STARTUP AND POWER OPERATION

LIMITING CONDITION FOR OPERATION

3.4.1.1 Both reactor coolant loops and both reactor coolant pumps in each loop shall be in operation.

APPLICABILITY: MODES 1 and 2.

ACTION:

With less than the above required reactor coolant pumps in operation, be in at least HOT STANDBY within 1 hour.

SURVEILLANCE REQUIREMENTS

4.4.1.1 The above required reactor coolant loops shall be verified to be in operation and circulating reactor coolant ~~at least once per 12 hours.~~

Add INSERT 1a

REACTOR COOLANT SYSTEM

HOT STANDBY

LIMITING CONDITION FOR OPERATION

3.4.1.2 The reactor coolant loops listed below shall be OPERABLE and at least one of these reactor coolant Loops shall be in operation.*

- a. Reactor Coolant Loop 1 and its associated steam generator and at least one associated reactor coolant pump.
- b. Reactor Coolant Loop 2 and its associated steam generator and at least one associated reactor coolant pump.

APPLICABILITY: MODE 3**.

ACTION:

- a. With less than the above required reactor coolant loops OPERABLE, restore the required loops to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.
- b. With no reactor coolant loop in operation, suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SHUTDOWN MARGIN of Technical Specification 3.1.1.1 or 3.1.1.2 and immediately initiate corrective action to return the required reactor coolant loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.2.1 At least the above required reactor coolant pumps, if not in operation, shall be determined to be OPERABLE ~~once per 7 days~~ by verifying correct breaker alignments and indicated power availability.

Add INSERT 1a

4.4.1.2.2 At least one reactor coolant loop shall be verified to be in operation and circulating reactor coolant ~~at least once per 12 hours~~.

4.4.1.2.3 The required steam generator(s) shall be determined OPERABLE by verifying the secondary side water level to be $\geq 50\%$ of wide range indication ~~at least once per 12 hours~~.

*All reactor coolant pumps may be deenergized for up to 1 hour provided (1) no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN of Technical Specification 3.1.1.1 or 3.1.1.2, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

**See Special Test Exception 3.10.5.

REACTOR COOLANT SYSTEM

HOT SHUTDOWN

SURVEILLANCE REQUIREMENTS

4.4.1.3.1 The required reactor coolant pump(s), if not in operation, shall be determined to be OPERABLE ~~once per 7 days by verifying correct breaker alignments and indicated power availability.~~

Add INSERT 1a

4.4.1.3.2 The required ~~steam generator(s)~~ shall be determined OPERABLE by verifying the secondary side water level to be $\geq 50\%$ of wide range indication ~~at least once per 12 hours.~~

4.4.1.3.3 At least one reactor coolant or shutdown cooling loop shall be verified to be in operation and circulating reactor coolant ~~at least once per 12 hours.~~

REACTOR COOLANT SYSTEM

COLD SHUTDOWN - LOOPS FILLED

SURVEILLANCE REQUIREMENTS

- 4.4.1.4.1 The required reactor coolant pump(s), if not in operation, shall be determined to be OPERABLE ~~once per 7 days~~ by verifying correct breaker alignments and indicated power availability.
- 4.4.1.4.2 The required steam generator(s) shall be determined OPERABLE by verifying the secondary side water level to be $\geq 50\%$ of wide range indication ~~at least once per 12 hours~~.
- 4.4.1.4.3 At least one reactor coolant loop or shutdown cooling train shall be verified to be in operation and circulating reactor coolant ~~at least once per 12 hours~~.

Add INSERT 1a

REACTOR COOLANT SYSTEM

COLD SHUTDOWN - LOOPS NOT FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.5 Two shutdown cooling loops shall be OPERABLE# and at least one shutdown cooling loop shall be in operation.*

APPLICABILITY: MODE 5 with reactor coolant loops not filled.

ACTION:

- a. With less than the above required loops OPERABLE, immediately initiate corrective action to return the required loops to OPERABLE status as soon as possible.
- b. With no shutdown cooling loop in operation, suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SHUTDOWN MARGIN of Technical Specification 3.1.1.1 or 3.1.1.2 and immediately initiate corrective action to return the required shutdown cooling loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.5 At least one shutdown cooling loop shall be determined to be in operation and circulating reactor coolant ~~at least once per 12 hours.~~

← Add INSERT 1a

One shutdown cooling loop may be inoperable for up to 2 hours for surveillance testing provided the other shutdown cooling loop is OPERABLE and in operation.

* The shutdown cooling pump (LPSI pump) may be deenergized for up to 1 hour provided (1) no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN of Technical Specification 3.1.1.1 or 3.1.1.2, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

REACTOR COOLANT SYSTEM

3/4.4.3 PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.3.1 The pressurizer shall be OPERABLE with:

- a. A steady-state water volume greater than or equal to 26% indicated level (350 cubic feet) but less than or equal to 62.5% indicated level (900 cubic feet), and,
- b. At least two groups of pressurizer heaters powered from Class 1E buses each having a nominal capacity of 150 kW.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. With only one group of the above required pressurizer heaters OPERABLE, restore at least two groups to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. With the pressurizer otherwise inoperable, be in at least HOT STANDBY with the reactor trip breakers open within 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.3.1.1 The pressurizer water volume shall be determined to be within its limit at ~~least once per 12 hours~~.

4.4.3.1.2 The capacity of each of the above required groups of pressurizer heaters shall be verified to be at least 150 kW at ~~least once each refueling interval~~.

Add INSERT 1a

4.4.3.1.3 The emergency power supply for the pressurizer heaters shall be demonstrated OPERABLE at ~~each refueling interval~~ by:

- a. Verifying the above pressurizer heaters are automatically shed from the emergency power sources upon the injection of an SIAS test signal.
- b. Verifying that the above heaters can be manually placed and energized on the emergency power source from the control room.

REACTOR COOLANT SYSTEM

AUXILIARY SPRAY

LIMITING CONDITION FOR OPERATION

3.4.3.2 Both auxiliary spray valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

- a. With only one of the above required auxiliary spray valves OPERABLE, restore both valves to OPERABLE status within 30 days or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. With none of the above required auxiliary spray valves OPERABLE, restore at least one valve to OPERABLE status within the next 6 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.3.2.1 The auxiliary spray valve shall be verified to have power available to each valve every 24 hours.

← Add INSERT 1a →

4.4.3.2.2 The auxiliary spray valves shall be cycled at least once per ~~16 months~~.

REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION (Continued)

Perform SR 4.4.5.2.1 once per 24 hours and restore the containment sump monitor to OPERABLE status within 30 days;

or

Be in MODE 3 in 6 hours and MODE 5 in the following 30 hours.

- c. All required RCS leakage detection instrumentation inoperable.

Initiate ACTION within 1 hour to be in MODE 3 within the next 6 hours and MODE 5 in the following 30 hours.

Add INSERT 1a

SURVEILLANCE REQUIREMENTS

4.4.5.1 The leakage detection systems shall be demonstrated OPERABLE by:

- a. Containment atmosphere particulate monitor system - performance of CHANNEL CHECK ~~at least once per 12 hours~~, CHANNEL CALIBRATION ~~at least once per 18 months~~ and CHANNEL FUNCTIONAL TEST ~~at least once per 92 days~~.
- b. Containment sump level and flow monitors - performance of a CHANNEL CHECK (containment sump level monitor only) ~~at least once per 12 hours~~ and a CHANNEL CALIBRATION ~~at least once per 18 months~~.

Add INSERT 1a

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.5.2 Reactor Coolant System operational leakage shall be limited to:

- a. No PRESSURE BOUNDARY LEAKAGE,
- b. 1 gpm UNIDENTIFIED LEAKAGE,
- c. 75 gallons per day primary to secondary leakage through any one steam generator (SG),
- d. 10 gpm IDENTIFIED LEAKAGE from the Reactor Coolant System, and
- e. 1 gpm leakage at a Reactor Coolant System pressure of 2250 ± 20 psia from any Reactor Coolant System pressure isolation valve specified in Table 3.4-1.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With any PRESSURE BOUNDARY LEAKAGE, or primary to secondary leakage not within limit, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With any Reactor Coolant System operational leakage greater than any one of the limits, excluding PRESSURE BOUNDARY LEAKAGE, primary to secondary leakage, and leakage from Reactor Coolant System pressure isolation valves, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With any Reactor Coolant System pressure isolation valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least one closed manual or deactivated automatic valve, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

NOTE: Not required to be performed until 12 hours after establishment of steady state operation.

4.4.5.2.1 Reactor Coolant System leakages, except for primary to secondary leakage, shall be demonstrated to be within each of the above limits by performance of a Reactor Coolant System water inventory balance at least once per 72 hours.

Add INSERT 1a

4.4.5.2.2 Primary to secondary leakage shall be verified to be ≤ 75 gallons per day through any one SG at least once per 72 hours.

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

4.4.5.2.3 Each Reactor Coolant System pressure isolation valve specified in Table 3.4-1, Section A and Section B, shall be demonstrated OPERABLE by verifying leakage to be within its limit:

- a. ~~At least once per 18 months,~~ Add INSERT 1b
- b. Prior to entering MODE 2 whenever the plant has been in COLD SHUTDOWN for 7 days or more and if leakage testing has not been performed in the previous 9 months,
- c. Prior to returning the valve to service following maintenance, repair, or replacement work on the valve,
- d. Following valve actuation for valves in Section B due to automatic or manual action or flow through the valve:
 - 1. Within 24 hours by verifying valve closure, and
 - 2. Within 31 days by verifying leakage rate.

The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4.

4.4.5.2.4 Each Reactor Coolant System pressure isolation valve power-operated valve specified in Table 3.4-1, Section C, shall be demonstrated OPERABLE by verifying leakage to be within its limit:

- a. ~~At least once per 18 months, and~~ Add INSERT 1b
- b. Prior to returning the valve to service following maintenance, repair, or replacement work on the valve.

The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4.

TABLE 4.4-4

PRIMARY COOLANT SPECIFIC ACTIVITY SAMPLE
AND ANALYSIS PROGRAM

<u>TYPE OF MEASUREMENT AND ANALYSIS</u>	<u>SAMPLE AND ANALYSIS FREQUENCY</u>	<u>MODES IN WHICH SAMPLE AND ANALYSIS REQUIRED</u>
1. Gross Activity Determination	At least once per 72 hours	1, 2, 3, 4
2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	1 per 14 days	1
3. Radiochemical for E Determination	1 per 6 months*	
4. Isotopic Analysis for Iodine Including I-131, I-133, and I-135	a) Once per 4 hours, whenever the specific activity exceeds 1.0 $\mu\text{Ci/gram}$, DOSE EQUIVALENT I-131 or 100/E $\mu\text{Ci/gram}$, and	1#, 2#, 3#, 4#, 5#
	b) One sample between 2 and 6 hours following a THERMAL POWER change exceeding 15 % of the RATED THERMAL POWER within a 1-hour period.	1, 2, 3

Replace marked
through lines with
'SFCP'.

* Sample to be taken after a minimum of 2 EFPD and 20 days of POWER OPERATION have elapsed since reactor was last subcritical for 48 hours or longer.

Until the specific activity of the primary coolant system is restored within its limits.

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS

Add INSERT 1a

4.4.8.1.1 The Reactor Coolant System temperature and pressure shall be determined to be within the limits ~~at least once per 30 minutes~~ during system heatup, cooldown, and inservice leak and hydrostatic testing operations.

4.4.8.1.2 The reactor vessel material irradiation surveillance specimens shall be removed and examined, to determine changes in material properties, at the intervals required by 10 CFR Part 50 Appendix H in accordance with the Reactor Vessel material surveillance program - withdrawal schedule in FSAR Table 5.3-10. The results of these examinations shall be used to update Figures 3.4-2 and 3.4-3.

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS

4.4.8.3.1 For each SDC System suction line relief valve:

- a. verify in the control room ~~at least once per 12 hours~~ that each valve in the suction path between the RCS and the SDC relief valve is open.
- b. verify each SDC relief valve is OPERABLE in accordance with the Inservice Testing Program.

Add INSERT 1a

4.4.8.3.2 With the RCS vented per ACTIONS a, b, or c, the RCS vent(s) and all valves in the vent path shall be verified to be open ~~at least once per 12 hours~~*.

*Except when the vent pathway is provided with a valve which is locked, sealed, or otherwise secured in the open position, then verify these valves open ~~at least once per 31 days~~.

REACTOR COOLANT SYSTEM

3/4.4.10 REACTOR COOLANT SYSTEM VENTS

LIMITING CONDITION FOR OPERATION

3.4.10 At least one Reactor Coolant System vent path consisting of at least two valves in series powered from emergency busses shall be OPERABLE and closed at each of the following locations:

- a. Reactor vessel head, and
- b. Pressurizer steam space.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With one of the above Reactor Coolant System vent paths inoperable, STARTUP and/or POWER OPERATION may continue provided the inoperable vent path is maintained closed with power removed from the valve actuator of all the vent valves and block valves in the inoperable vent path; restore the inoperable vent path to OPERABLE status within 30 days, or, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With two or more Reactor Coolant System vent paths inoperable; maintain the inoperable vent paths closed with power removed from the valve actuators of all the vent valves and block valves in the inoperable vent paths, and restore at least one of the vent paths to OPERABLE status within 72 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

Add INSERT 1a

4.4.10 Each Reactor Coolant System vent path shall be demonstrated OPERABLE ~~at least once per 18 months~~ by:

- a. Verifying all manual isolation valves in each vent path are locked in the open position.
- b. Cycling each vent valve through at least one complete cycle of full travel from the control room during COLD SHUTDOWN or REFUELING.
- c. Verifying flow through the Reactor Coolant System vent paths during venting during COLD SHUTDOWN or REFUELING.

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

ACTION: (Continued)

MODES 1, 2, 3 and 4 with pressurizer pressure greater than or equal to 1750 psia (continued).

- d. With two of the required safety injection tanks inoperable, restore one of the tanks to OPERABLE status within 1 hour, or be in HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than 1750 psia within the following 6 hours.

MODES 3 and 4 with pressurizer pressure less than 1750 psia

- e. With one of the required safety injection tanks inoperable due to boron concentration not within limits, restore the boron concentration to within limits within 72 hours, or be in at least COLD SHUTDOWN within the following 24 hours.
- f. With one of the required safety injection tanks inoperable due to inability to verify level or pressure, restore the tank to OPERABLE status within 72 hours, or be in at least COLD SHUTDOWN within the following 24 hours.
- g. With one of the required safety injection tanks inoperable for reasons other than ACTION a or b, restore the inoperable tank to OPERABLE status within 1 hour, or be in at least COLD SHUTDOWN within the following 24 hours.
- h. With two of the required safety injection tanks inoperable, restore one of the tanks to OPERABLE status within 1 hour, or be in at least COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.5.1 Each safety injection tank shall be demonstrated OPERABLE:

- a. ~~At least once per 12 hours by:~~ Add INSERT 1b
 - 1. Verifying the contained borated water volume and nitrogen cover-pressure in the tanks, and
 - 2. Verifying that each safety injection tank isolation valve is open.
- b. ~~At least once per 31 days~~ by verifying the boron concentration of the safety injection tank solution.
- c. Within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume by verifying the boron concentration of the safety injection tank solution. This surveillance is not required when the volume increase makeup source is the RWSP.

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

SURVEILLANCE REQUIREMENTS (Continued)

- d. ~~At least once per 31 days~~ when the RCS pressure is above 1750 psia, by verifying that the isolation valve operator breakers are padlocked in the open position.
- e. ~~At least once per 18 months~~ by verifying that each safety injection tank isolation valve opens automatically under each of the following conditions:
 - 1. When an actual or simulated RCS pressure signal exceeds 535 psia, and
 - 2. Upon receipt of a safety injection test signal.

Add INSERT 1b

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

- a. ~~At least once per 12 hours~~ by verifying that the following valves are in the indicated positions with the valves key-locked shut:

<u>Valve Number</u>	<u>Valve Function</u>	<u>Valve Position</u>
a. 2SI-V1556 (SI-506A)	a. Hot Leg Injection	a. SHUT
b. 2SI-V1557 (SI-502A)	b. Hot Leg Injection	b. SHUT
c. 2SI-V1558 (SI-502B)	c. Hot Leg Injection	c. SHUT
d. 2SI-V1559 (SI-506B)	d. Hot Leg Injection	d. SHUT

- b. ~~At least once per 31 days~~ by:

1. 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.
2. Verifying the ECCS piping is full of water.

- c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the safety injection system sump and cause restriction of the pump suction during LOCA conditions. This visual inspection shall be performed:

1. For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and
2. Of the areas affected within containment at the completion of containment entry when CONTAINMENT INTEGRITY is established.

- d. ~~At least once per 18 months~~ by:

1. Verifying the action of the open permissive interlock (OPI) and isolation valve position alarms of the shutdown cooling system when the reactor coolant system pressure (actual or simulated) is between 392 psia and 422 psia.

Add INSERT 1b

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. A visual inspection of the safety injection system sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or corrosion.
 3. Verifying that a minimum total of 380 cubic feet of granular trisodium phosphate dodecahydrate (TSP) is contained within the TSP storage baskets.
 4. Verifying that when a representative sample of 13.07 ± 0.03 grams of TSP from a TSP storage basket is submerged, without agitation, in 4 ± 0.1 liters of $120 \pm 10^\circ\text{F}$ water borated to 3011 ± 30 ppm, the pH of the mixed solution is raised to greater than or equal to 7 within 3 hours.
- e. ~~At least once per 18 months by:~~ Add INSERT 1b +
1. Verifying that each automatic valve in the flow path actuates to its correct position on SIAS and RAS test signals.
 2. Verifying that each of the following pumps start automatically upon receipt of a safety injection actuation test signal:
 - a. High pressure safety injection pump.
 - b. Low pressure safety injection pump.
 3. Verifying that on a recirculation actuation test signal, the low pressure safety injection pumps stop, the safety injection system sump isolation valves open.
- f. By verifying that each of the following pumps required to be OPERABLE performs as indicated on recirculation flow when tested pursuant to the Inservice Testing Program:
1. High pressure safety injection pump differential pressure greater than or equal to 1429 psid.
 2. Low pressure safety injection pump differential pressure greater than or equal to 168 psid.

EMERGENCY CORE COOLING SYSTEMS

3/4.5.4 REFUELING WATER STORAGE POOL

LIMITING CONDITION FOR OPERATION

3.5.4 The refueling water storage pool shall be OPERABLE with:

- a. A minimum contained borated water volume of 83% indicated level,
- b. Between 2050 and 2900 ppm of boron, and
- c. A solution temperature of greater than or equal to 55°F and less than or equal to 100°F.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With the refueling water storage pool inoperable, restore the pool to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.4 The RWSP shall be demonstrated OPERABLE:

- a. ~~At least once per 7 days~~ by:
 - 1. Verifying the contained borated water volume in the pool, and
 - 2. Verifying the boron concentration of the water.
- b. ~~At least once per 24 hours~~ by verifying the RWSP temperature when the RAB air temperature is less than 55°F or greater than 100°F.

Add INSERT 1b

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

Add INSERT 1b

- a. ~~At least once per 31 days~~ by verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.
- b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.
- c. After each closing of each penetration subject to Type B testing, except containment air locks, if opened following a Type A or B test, by leak rate testing the seal in accordance with the Containment Leakage Rate Testing Program.

*Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

~~4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:~~

- a. By verifying seal leakage in accordance with the Containment Leakage Rate Testing Program, |
- b. By conducting overall air lock leakage tests in accordance with the Containment Leakage Rate Testing Program. |
- c. ~~At least once per 6 months~~ by verifying that only one door in each air lock can be opened at a time. |

← Add INSERT 1b

CONTAINMENT SYSTEMS

INTERNAL PRESSURE

LIMITING CONDITION FOR OPERATION

3.6.1.4 Primary containment internal pressure shall be maintained less than 27 inches H₂O gauge and greater than 14.275 psia.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With the containment internal pressure outside of the limits above, restore the internal pressure to within the limits within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.4 The primary containment internal pressure shall be determined to be within the limits at ~~least once per 12 hours.~~

← Add INSERT 1a

CONTAINMENT SYSTEMS

AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

3.6.1.5 Primary containment average air temperature shall be $\geq 95^{\circ}\text{F}^*$ and $\leq 120^{\circ}\text{F}$.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. If the minimum containment average air temperature is less than 95°F^* but greater than or equal to 90°F^* , then within 8 hours either restore containment air temperature to greater than or equal to 95°F or reduce the peak linear heat generation rate limit in accordance with the COLR. Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. If the minimum containment average air temperature is less than 90°F , then restore containment air temperature to greater than or equal to 95°F within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. If maximum containment average air temperature is greater than 120°F , then restore containment air temperature to less than or equal to 120°F within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.5 The primary containment average air temperature shall be the arithmetical average of the temperatures at any three of the following locations and shall be determined ~~at least once per 24 hours~~:

Add INSERT 1a

Location

- a. Containment Fan Cooler No. 1A Air Intake
- b. Containment Fan Cooler No. 1B Air Intake
- c. Containment Fan Cooler No. 1C Air Intake
- d. Containment Fan Cooler No. 1D Air Intake

* The minimum containment average air temperature limit is only applicable at greater than 70% RATED THERMAL POWER.

CONTAINMENT SYSTEMS

CONTAINMENT VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.1.7 Each containment purge supply and exhaust isolation valve (CAP 103, CAP 104, CAP 203, and CAP 204) shall be OPERABLE and may be open at no greater than the 52° open position allowed by the mechanical stop for less than 90 hours per 365 days.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With a containment purge supply and/or exhaust isolation valve(s) open for greater than or equal to 90 hours per 365 days at any open position, close the open valve(s) or isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With a containment purge supply and/or exhaust isolation valve(s) having a measured leakage rate exceeding the limits of Surveillance Requirement 4.6.1.7.2, restore the inoperable valve(s) to OPERABLE status within 24 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.7.1 The cumulative time that the purge supply or exhaust isolation valves are open during the past 365 days shall be determined ~~at least once per 7 days~~.

4.6.1.7.2 Each containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE in accordance with the Containment Leakage Rate Testing Program.

4.6.1.7.3 Each containment purge supply and exhaust isolation valve shall be demonstrated OPERABLE ~~during each COLD SHUTDOWN exceeding 24 hours~~ by verifying that the mechanical stops limit the valve opening to a position < 52° open.

Add INSERT 1a

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent containment spray systems shall be OPERABLE with each spray system capable of taking suction from the RWSP on a containment spray actuation signal and automatically transferring suction to the safety injection system sump on a recirculation actuation signal. Each spray system flow path from the safety injection system sump shall be via an OPERABLE shutdown cooling heat exchanger.

APPLICABILITY: MODES 1, 2, 3, and 4*.

ACTION:

- a. With one containment spray system inoperable, restore the inoperable spray system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours; restore the inoperable spray system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.
- b. With two containment spray systems inoperable, restore at least one spray system to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

- a. ~~At least once per 12 hours~~ by verifying that the water level in the containment spray header riser is ~~> 149.5 feet MSL elevation~~
Add INSERT 1b
- b. ~~At least once per 31 days~~ by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is correctly positioned to take suction from the RWSP.
- c. By verifying, that on recirculation flow, each pump develops a total head of greater than or equal to 219 psid when tested pursuant to the Inservice Testing Program.

*With Reactor Coolant System pressure > 400 psia.

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS (Continued)

SURVEILLANCE REQUIREMENTS (Continued)

- d. ~~At least once per 18 months by:~~ ← Add INSERT 1b
1. Verifying that each automatic valve in the flow path actuates to its correct position on a CSAS test signal.
 2. Verifying that upon a recirculation actuation test signal, the safety injection system sump isolation valves open and that a recirculation mode flow path via an OPERABLE shutdown cooling heat exchanger is established.
 3. Verifying that each spray pump starts automatically on a CSAS test signal.
- e. ~~At least once per 10 years~~ by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

CONTAINMENT SYSTEMS

CONTAINMENT COOLING SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.2 Two independent trains of containment cooling shall be OPERABLE with one fan cooler to each train.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one train of containment cooling inoperable, restore the inoperable train to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable containment cooling train to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the next 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.2 Each train of containment cooling shall be demonstrated OPERABLE:

a. ~~At least once per 31 days by:~~

1. Starting each operational fan not already running from the control room and verifying that each operational fan operates for at least 15 minutes.
2. Verifying a cooling water flow rate of greater than or equal to 625 gpm to each cooler.

b. ~~At least once per 18 months by:~~

1. Verifying that each fan starts automatically on an SIAS test signal.
2. Verifying a cooling water flow rate of greater than or equal to 1200 gpm to each cooler.
3. Verifying that each cooling water control valve actuates to its full open position on a SIAS test signal.

Add INSERT 1b

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.2 Each containment isolation valve shall be demonstrated OPERABLE ~~at least once per 18 months~~ by:

Add INSERT 1a

- a. Verifying that on a containment isolation test signal, each isolation valve actuates to its isolation position.
- b. Verifying that on a containment Radiation-High test signal, each containment purge valve actuates to its isolation position.

4.6.3.3 The isolation time of each power-operated or automatic containment isolation valve shall be determined to be within its limit when tested pursuant to the Inservice Testing Program.

CONTAINMENT SYSTEMS

3/4.6.6 SECONDARY CONTAINMENT

SHIELD BUILDING VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.6.1 Two independent shield building ventilation systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one shield building ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.1 Each shield building ventilation system shall be demonstrated OPERABLE:

Add INSERT 1b

- a. ~~At least once per 31 days on a STAGGERED TEST BASIS~~ by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 hours continuous with the heaters on.
- b. ~~At least once per 18 months~~ or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying that the ventilation system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is $10,000 \text{ cfm} \pm 10\%$.
2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.
3. Verifying a system flow rate of $10,000 \text{ cfm} \pm 10\%$ during system operation when tested in accordance with ANSI N510-1975.
- c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.

- d. ~~At least once per 18 months by:~~

Add INSERT 1b

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 7.8 inches water gauge while operating the system at a flow rate of $10,000 \text{ cfm} \pm 10\%$.
2. Verifying that the system starts on a safety injection actuation test signal.
3. Verifying that the filter cooling bypass valves can be manually cycled.
4. Verifying that each system produces a negative pressure of greater than or equal to 0.25 inch water gauge in the annulus within 1 minute after a start signal.
5. Verifying that the heaters dissipate $60 \pm 6.0, -6.0 \text{ kW}$ when tested in accordance with ANSI N510-1975.

CONTAINMENT SYSTEMS

SHIELD BUILDING INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.6.2 SHIELD BUILDING INTEGRITY shall be maintained with an annulus negative pressure greater than 5 inches water gauge.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

Without SHIELD BUILDING INTEGRITY, restore SHIELD BUILDING INTEGRITY within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.2 SHIELD BUILDING INTEGRITY shall be demonstrated:

- a. ~~At least once per 12 hours~~ by verifying the annulus pressure to be within its limits. Add INSERT 1b
- b. ~~At least once per 31 days~~ by verifying that each door in each access opening is closed except when the access opening is being used for normal transit entry and exit, then at least one door shall be closed.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.7.1.2 The emergency feedwater system shall be demonstrated OPERABLE:

- a. ~~At least once per 31 days~~ by verifying that each manual, power-operated, and automatic valve in each water flow path and in both steam supply flow paths to the turbine-driven EFW pump steam turbine, that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. At least once per 92 days ~~on a STAGGERED TEST BASIS~~ by testing the EFW pumps pursuant to the Inservice Testing Program. This surveillance requirement is not required to be performed for the turbine-driven EFW pump until 24 hours after exceeding 750 psig in the steam generators.
- c. ~~At least once per 18 months~~ by:

Add INSERT 1b

- 1. Verifying that each automatic valve in the flow path actuates to its correct position upon receipt of an actual or simulated actuation signal.

NOTE: This surveillance requirement is not required to be performed for the turbine-driven EFW pump until 24 hours after exceeding 750 psig in the steam generators.

- 2. Verifying that each EFW pump starts automatically upon receipt of an actual or simulated actuation signal.
- d. Prior to entering MODE 2, whenever the plant has been in MODE 4, 5, 6 or defueled, for 30 days or longer, or whenever feedwater line cleaning through the emergency feedwater line has been performed, by verifying flow from the condensate storage pool through both parallel flow legs to each steam generator.

PLANT SYSTEMS

CONDENSATE STORAGE POOL

LIMITING CONDITION FOR OPERATION

3.7.1.3 The condensate storage pool (CSP) shall be OPERABLE with:

- a. A minimum contained volume of at least 92% indicated level.*
- b. A water temperature of greater than or equal to 55°F and less than or equal to 100°F.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

In MODES 1, 2, and 3:

With the condensate storage pool inoperable, within 4 hours restore the CSP to OPERABLE status or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

In MODE 4:

With the condensate storage pool inoperable, within 4 hours restore the CSP to OPERABLE status or be in at least COLD SHUTDOWN within the next 24 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.3.1 The condensate storage pool shall be demonstrated OPERABLE:

- a. ~~At least once per 12 hours~~ by verifying the contained water volume is within its limits.
- b. ~~At least once per 24 hours~~ by verifying CSP temperature when the RAB air temperature is less than 55°F or greater than 100°F.

Add INSERT 1b

*In MODE 4, the CSP shall be OPERABLE with a minimum contained volume of at least 11% indicated level.

TABLE 4.7-1

SECONDARY COOLANT SYSTEM SPECIFIC ACTIVITY
SAMPLE AND ANALYSIS PROGRAM

<u>TYPE OF MEASUREMENT AND ANALYSIS</u>	<u>SAMPLE AND ANALYSIS FREQUENCY</u>
1. Gross Activity Determination	At least once per 72 hours
2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	a) 1 per 31 days , whenever the gross activity determina- tion indicates iodine con- centrations greater than 10% of the allowable limit. b) 1 per 6 months , whenever the gross activity determination indicates iodine concentra- tions below 10% of the allowable limit.

Add INSERT 1b

PLANT SYSTEMS

MAIN STEAM LINE ISOLATION VALVES (MSIVs)

LIMITING CONDITION FOR OPERATION

3.7.1.5 Two MSIVs shall be OPERABLE.

APPLICABILITY: MODE 1, and
MODES 2, 3, and 4, except when all MSIVs are closed and deactivated.

ACTION:

MODE 1

With one MSIV inoperable, restore the valve to OPERABLE status within 8 hours or be in STARTUP within the next 6 hours.

MODES 2, 3 and 4

With one MSIV inoperable, close the valve within 8 hours and verify the valve is closed once per 7 days. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

Note: Required to be performed for entry into MODES 1 and 2 only.

4.7.1.5 Each MSIV shall be demonstrated OPERABLE:

- a. By verifying full closure within 8.0 seconds when tested pursuant to the Inservice Testing Program.
- b. By verifying each MSIV actuates to the isolation position on an actual or simulated actuation signal ~~at least once per 18 months.~~

Add INSERT 1a

PLANT SYSTEMS

MAIN FEEDWATER ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.6 Each Main Feedwater Isolation Valve (MFIV) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

Note: Separate Condition entry is allowed for each valve.

With one or more MFIV inoperable, close and deactivate, or isolate the inoperable valve within 72 hours and verify inoperable valve closed and deactivated or isolated once every 7 days; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The provisions of Specification 3.0.4 do not apply.

SURVEILLANCE REQUIREMENTS

4.7.1.6 Each main feedwater isolation valve shall be demonstrated OPERABLE:

- a. By verifying isolation within 6.0 seconds when tested pursuant to the Inservice Testing Program.
- b. By verifying actuation to the isolation position on an actual or simulated actuation signal ~~at least once per 18 months.~~

Add INSERT 1a

3/4.7 PLANT SYSTEMS

3/4.7.1.7 ATMOSPHERIC DUMP VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.7 Each Atmospheric Dump Valve (ADV) shall be OPERABLE*.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTION:

- a. With the automatic actuation channel for one ADV inoperable, restore the inoperable ADV to OPERABLE status within 72 hours or reduce power to less than or equal to 70% RATED THERMAL POWER within the next 6 hours.
- b. With the automatic actuation channels for both ADVs inoperable, restore one ADV to OPERABLE status within 1 hour or reduce power to less than or equal to 70% RATED THERMAL POWER within the next 6 hours.
- c. With one ADV inoperable, for reasons other than above, restore the ADV 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.

The provisions of Specification 3.0.4 are not applicable provided one ADV is OPERABLE.

SURVEILLANCE REQUIREMENTS

4.7.1.7 The ADVs shall be demonstrated OPERABLE:

- a. By performing a CHANNEL CHECK ~~at least once per 12 hours~~ when the automatic actuation channels are required to be OPERABLE.
- b. By verifying each ADV automatic actuation channel is in automatic with a setpoint of less than or equal to 1040 psia ~~at least once per 92 days~~ when the automatic actuation channels are required to be OPERABLE.
- c. By verifying one complete cycle of each ADV when tested pursuant to the Inservice Testing Program.
- d. By performing a CHANNEL CALIBRATION of each ADV automatic actuation channel ~~at least once per 18 months~~.
- e. By verifying actuation of each ADV to the open position on an actual or simulated automatic actuation signal ~~at least once per 18 months~~.

Add INSERT 1a

* ADV automatic actuation channels (one per ADV, in automatic with a setpoint of less than or equal to 1040 psia) are not required to be OPERABLE when less than or equal to 70% RATED THERMAL POWER for greater than 6 hours.

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER AND AUXILIARY COMPONENT COOLING WATER SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.3 At least two independent component cooling water and associated auxiliary component cooling water trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With only one component cooling water and associated auxiliary component cooling water train OPERABLE, restore at least two trains 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.

SURVEILLANCE REQUIREMENTS

4.7.3 Each component cooling water and associated auxiliary component cooling water train 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 safety-related equipment actuates to its correct position on SIAS and CSAS test signals.
- c. ~~At least once per 18 months~~ by verifying that each component cooling water and associated auxiliary component cooling water pump starts automatically on an SIAS test signal.

Add INSERT 1b

PLANT SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

- c. With a Tornado Watch in effect, all 9 DCT fans under the missile protected portion of the DCT shall be OPERABLE. If the number of fans OPERABLE is less than required, restore the inoperable fan(s) to OPERABLE status within 1 hour, or be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.
- d. ~~With any UHS fan inoperable, determine the outside ambient temperature at least once every 2 hours and verify that the minimum fan requirements of Table 3.7-3 are satisfied (required only if the associated UHS is OPERABLE).~~

SURVEILLANCE REQUIREMENTS

4.7.4. Each train of UHS shall be determined OPERABLE:

- a. ~~At least once per 24 hours by verifying the average water temperature and water level to be within specified limits.~~
- b. ~~At least once per 31 days, by verifying that each wet tower and dry tower fan that is not already running, starts and operates for at least 15 minutes.~~

Add INSERT 1b

PLANT SYSTEMS

ACTION (Continued):

- e. With one or more control room emergency air filtration trains inoperable due to an inoperable control room envelope boundary in MODES 5 or 6, or during load movements with or over irradiated fuel assemblies, immediately suspend load movements with or over irradiated fuel assemblies and operations involving CORE ALTERATIONS.
- f. With two control room emergency air filtration trains inoperable in MODES 1, 2, 3, or 4 for reasons other than ACTION b, immediately enter LCO 3.0.3.
- g. With two control room emergency air filtration trains inoperable in MODES 5 and 6 or during load movements with or over irradiated fuel assemblies, immediately suspend load movements with or over irradiated fuel assemblies and operations involving CORE ALTERATIONS.

SURVEILLANCE REQUIREMENTS

4.7.6.1 Each control room air filtration train (S-8) shall be demonstrated OPERABLE:

- a. ~~At least once per 31 days on a STAGGERED TEST BASIS~~ by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 continuous hours with the heaters on.
- b. ~~At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:~~
 - 1. Verifying that the filtration train satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 4225 cfm \pm 10%.

Add INSERT 1b

Note 1: The control room envelope (CRE) boundary may be opened intermittently under administrative control.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.
3. Verifying a system flow rate of 4225 cfm $\pm 10\%$ during train operation when tested in accordance with ANSI N510-1975.
- c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.
- d. At least once per 18 months by: Add INSERT 1b
 - 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 7.8 inches water gauge while operating the train at a flow rate of 4225 cfm $\pm 10\%$.
 - 2. Verifying that on a safety injection actuation test signal or a high radiation test signal, the train automatically switches into a recirculation mode of operation with flow through the HEPA filters and charcoal adsorber banks and the normal outside airflow paths isolate.
 - 3. Verifying that heaters dissipate 10 ± 1.0 , -1.0 kW when tested in accordance with ANSI N510-1975.
 - 4. Verifying that on a toxic gas detection signal, the system automatically switches to the isolation mode of operation.
- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the train at a flow rate of 4225 cfm $\pm 10\%$.
- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the train at a flow rate of 4225 cfm $\pm 10\%$.
- g. Perform required control room envelope unfiltered air leakage testing in accordance with the Control Room Envelope Habitability Program.

PLANT SYSTEMS

CONTROL ROOM AIR TEMPERATURE - OPERATING

LIMITING CONDITION FOR OPERATION

3.7.6.3 Two independent control room air conditioning units shall be OPERABLE.

APPLICABILITY*: MODES 1, 2, 3, and 4.

ACTION:

- a. With one control room air conditioning unit inoperable, restore the inoperable unit to OPERABLE status within 7 days or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With two control room air conditioning units inoperable, return one unit to an OPERABLE status within 1 hour or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.6.3 Each control room air conditioning unit shall be demonstrated OPERABLE:

- a. At least once per 12 hours by verifying that the operating control room air conditioning unit is maintaining average control room air temperature less than or equal to 80°F.
- b. At least quarterly, if not performed within the last quarter, by verifying that each control room air conditioning unit starts and operates for at least 15 minutes.

Add INSERT 1b

*During load movements with or over irradiated fuel assemblies, TS 3.7.6.4 is also applicable.

PLANT SYSTEMS

3/4.7.7 CONTROLLED VENTILATION AREA SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7 Two independent controlled ventilation area systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one controlled ventilation area system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.7 Each controlled ventilation area system shall be demonstrated OPERABLE:

- a. ~~At least once per 31 days on a STAGGERED TEST BASIS~~ by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 hours continuous with the heaters on. Add INSERT 1b
- b. ~~At least once per 18 months~~ or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:
 - 1. Verifying that the controlled ventilation area system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 3000 cfm \pm 10%.
 - 2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.
 - 3. Verifying a system flow rate of 3000 cfm \pm 10% during system operation when tested in accordance with ANSI N510-1975.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.
- d. ~~At least once per 18 months by:~~ Add INSERT 1b
1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 7.8 inches water gauge while operating the system at a flow rate of 3000 cfm \pm 10%.
 2. Verifying that the system starts on a Safety Injection Actuation Test Signal and achieves and maintains a negative pressure of \geq 0.25 inch water gauge within 45 seconds.
 3. Verifying that the filter cooling bypass valves can be manually cycled.
 4. Verifying that the heaters dissipate 20 ± 2.0 , -2.0 kW when tested in accordance with ANSI N510-1975.
- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 3000 cfm \pm 10%.
- f. After each complete or partial replacement of a charcoal absorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 3000 cfm \pm 10%.

PLANT SYSTEMS

3/4.7.12 ESSENTIAL SERVICES CHILLED WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.12 Two independent essential services chilled water loops shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTION:

With only one essential services chilled water loop OPERABLE, restore two loops 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.

SURVEILLANCE REQUIREMENTS

4.7.12.1 Each of the above required essential services chilled water loop 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 31 days~~ by verifying that the water outlet temperature is $\leq 42^{\circ}\text{F}$ at a flow rate of ≥ 500 gpm.
- c. Deleted
- d. ~~At least once per 18 months~~, by verifying that each essential services chilled water pump and compressor starts automatically on a safety injection actuation test signal.

Add INSERT 1b

4.7.12.2 The backup essential services chilled water pump and chiller shall be demonstrated OPERABLE in accordance with Specification 4.7.12.1 whenever it is functioning as part of one of the required essential services chilled water loops.

ELECTRICAL POWER SYSTEMS

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~~ by transferring manually and automatically unit power supply from the normal circuit to the alternate circuit.

Add INSERT 1a

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE*:

Add INSERT 1b

- a. ~~At least once per 31 days on a STAGGERED TEST BASIS~~ by:
 1. Verifying the fuel level in the diesel oil feed tank,
 2. Deleted,
 3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the diesel oil feed tank,
 4. Verifying the diesel starts**. The generator voltage and frequency shall be at least 3920 volts and 58.8 Hz in ≤ 10 seconds after the start signal. The steady state voltage and frequency shall be maintained at $4160 + 420, -240$ volts and 60 ± 1.2 Hz. The diesel generator shall be started for this test by using one of the following signals:
 - a) Manual.
 - b) Simulated loss-of-offsite power by itself.
 - c) Simulated loss-of-offsite power in conjunction with an ESF actuation test signal.
 - d) An ESF actuation test signal by itself.

*All planned starts for the purpose of surveillance in this section may be preceded by a prelube period as recommended by the manufacturer.

**A modified diesel generator start involving idling and gradual acceleration to synchronous speed may be used for this surveillance requirement as recommended by the manufacturer. When modified start procedures are not used, the time, speed, voltage, and frequency tolerances of this surveillance requirement must be met.

ELECTRICAL POWER SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

5. Verifying the generator is synchronized, loaded to an indicated 4000-4400 Kw* in accordance with the manufacturer's recommendation and operates for at least an additional 60 minutes[#], and
6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
 - 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 checking for and removing accumulated water from the diesel oil feed tanks.
 - c. Deleted

Add INSERT 1b

*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 variation due to changing bus loads shall not invalidate the test.

[#]This surveillance requirement shall be preceded by and immediately follow without shutdown a successful performance of 4.8.1.1.2a.4 or 4.8.1.1.2d.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

Add INSERT 1b

- d. ~~At least once per 184 days~~ a diesel generator fast start test shall be performed in accordance with TS 4.8.1.1.2a.4. Performance of the ~~184 day~~ fast start test satisfies the 31 day testing requirements specified in TS 4.8.1.1.2a.4.
- e. ~~At least once per 18 months~~ by:
1. Verifying the generator capability to reject a load of greater than or equal to 498 kW while maintaining voltage at 4160 +420, -240 volts and frequency at 60 +4.5, -1.2 Hz.
 2. Verifying the generator capability to reject a load of an indicated 4000-4400 kW without tripping. The generator voltage shall not exceed 5023 volts during and following the load rejection.
 3. During shutdown, simulating a loss-of-offsite power by itself, and:
 - a) Verifying deenergization 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 and the permanently connected loads within 10 seconds after the auto-start signal, 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, the steady-state voltage and frequency of the emergency busses shall be maintained at 4160 +420, -240 volts and 60 +1.2, -0.3 Hz during this test.
 4. Verifying that on an SIAS actuation test signal (without loss-of-offsite power) the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The steady-state generator voltage and frequency shall be 4160 +420, -240 volts and 60 ± 1.2 Hz within 10 seconds after the auto-start signal; the generator voltage and frequency shall be maintained within these limits during this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

8. During shutdown, verifying the diesel generator's capability to:
 - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
 - b) Transfer its loads to the offsite power source, and
 - c) Be restored to its standby status.
9. During shutdown, 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 energizes the emergency loads with offsite power.
10. Verifying that each fuel transfer pump transfers fuel to its associated diesel oil feed tank by taking suction from the opposite train fuel oil storage tank via the installed cross connect.
11. During shutdown, verifying that the automatic load sequence timer is OPERABLE with the time of each load block within $\pm 10\%$ of the sequenced load block time.
12. Verifying that the following diesel generator lockout features prevent diesel generator starting only when required:
 - a) turning gear engaged
 - b) emergency stop
 - c) loss of D.C. control power
 - d) governor fuel oil linkage tripped

f. Deleted

g. ~~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 600 rpm (60 ± 1.2 Hz) in less than or equal to 10 seconds.

h. Deleted

Add INSERT 1b

ELECTRICAL POWER SYSTEMS

DIESEL FUEL OIL

LIMITING CONDITION FOR OPERATION

3.8.1.3 The stored diesel fuel oil shall be within limits for each required diesel generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTION: (Note: Separate ACTION entry is allowed for each DG.)

- a. With the fuel oil storage tank volume less than 39,300 gallons and greater than 37,000 gallons, restore fuel oil storage tank volume to greater than or equal to 39,300 gallons within 5 days (provided replacement fuel oil is onsite within the first 48 hours).
- b. With one or more DGs with stored fuel oil total particulates not within limits, restore fuel oil total particulates to within limits within 7 days.
- c. With one or more DGs with new fuel oil properties not within limits, restore stored fuel oil properties to within limits within 30 days.
- d. If any of the above ACTIONS cannot be met, or if the diesel fuel oil is not within limits for reasons other than the above ACTIONS, immediately declare the associated DG(s) inoperable.

SURVEILLANCE REQUIREMENTS

- 4.8.1.3.1 ~~At least once per 31 days on a STAGGERED TEST BASIS~~ verify each fuel oil storage tank volume.
- 4.8.1.3.2 Verify fuel oil properties of new or stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.

Add INSERT 1b

ELECTRICAL POWER SYSTEMS

3/4.8.2 D.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 As a minimum the following D.C. electrical sources shall be OPERABLE:

- a. 125-volt Battery Bank No. 3A-S and one associated full capacity charger (3A1-S or 3A2-S).
- b. 125-volt Battery Bank No. 3B-S and one associated full capacity charger (3B1-S or 3B2-S).
- c. 125-volt battery Bank No. 3AB-S and one associated full capacity charger (3AB1-S or 3AB2-S).

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With one of the required battery banks inoperable, restore the inoperable battery bank 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.
- b. With one of the required full capacity chargers inoperable, demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.1a.1 within 1 hour, and at least once per 8 hours thereafter. If any Category A limit in Table 4.8-2 is not met, declare the battery inoperable.

SURVEILLANCE REQUIREMENTS

4.8.2.1 Each 125-volt battery bank and at least one associated charger shall be demonstrated OPERABLE:

Add INSERT 1b

- a. ~~At least once per 7 days~~ by verifying that:
 1. The parameters in Table 4.8-2 meet the Category A limits, and
 2. The total battery terminal voltage is greater than or equal to 125 volts on float charge.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. ~~At least once per 92 days~~ and within 7 days after a battery discharge with battery terminal voltage below 110-volts, or battery overcharge with battery terminal voltage above 150 volts, by verifying that:
1. The parameters in Table 4.8-2 meet the Category B limits,
 2. There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150×10^{-6} ohms, and Add INSERT 1b
 3. The average electrolyte temperature of a random sample of at least ten of the connected cells is above 70°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, 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} ohms, and
 4. The battery charger will supply at least 150 amperes for 3A1-S, 3A2-S, 3B1-S and 3B2-S and 200 amperes for 3AB1-S and 3AB2-S at greater than or equal to 132 volts for at least 8 hours.
- d. ~~At least once per 18 months~~, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service 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. This performance discharge test may be performed in lieu of the battery service test required by Surveillance Requirement 4.8.2.1d.
- f. Annual 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.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION:

- a. With one of the required divisions of A.C. ESF busses not fully energized, reenergize the division within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one A.C. SUPS bus either not energized from its associated inverter, or with the inverter not connected to its associated D.C. bus: (1) reenergize the A.C. SUPS bus 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 (2) reenergize the A.C. SUPS bus from its associated inverter connected to its associated D.C. bus within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With one D.C. bus not connected to its associated battery bank, reconnect the D.C. bus from its associated OPERABLE battery bank within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.3.1 The specified busses shall be determined energized in the required manner ~~at least once per 7 days~~ by verifying correct breaker alignment and indicated voltage on the busses.

Add INSERT 1a

ELECTRICAL POWER SYSTEMS

ONSITE POWER DISTRIBUTION

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.3.2 As a minimum, the following electrical busses shall be energized in the specified manner:

- a. One division of A.C. ESF busses consisting of one 4160 volt and one 480-volt A.C. ESF bus (3A3-S and 3A31-S or 3B3-S and 3B31-S).
- b. Two 120-volt A.C. SUPS busses energized from their associated inverters connected to their respective D.C. busses (3MA-S, 3MB-S, 3MC-S, or 3MD-S).
- c. One 120-volt A.C. SUPS Bus (3A-S or 3B-S) energized from its associated inverter connected to its respective D.C. bus.
- d. One 125-volt D.C. bus (3A-DC-S or 3B-DC-S) connected to its associated battery bank.

APPLICABILITY: MODES 5 and 6.

ACTION:

With any of the above required electrical busses not energized in the required manner, immediately suspend all operations involving CORE ALTERATIONS, operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN or boron concentration, or load movements with or over irradiated fuel, initiate corrective action to energize the required electrical busses in the specified manner as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.3.2 The specified busses shall be determined energized in the required manner ~~at least once per 7 days~~ by verifying correct breaker alignment and indicated voltage on the busses.

← Add INSERT 1a

ELECTRICAL POWER SYSTEMS

3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

LIMITING CONDITION FOR OPERATION

3.8.4.1 Primary and backup containment penetration conductor overcurrent protective devices associated with each containment electrical penetration circuit shall be OPERABLE. The scope of these protective devices excludes those circuits for which credible fault currents would not exceed the electrical penetration design rating.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With one or more of the above required containment penetration conductor overcurrent devices inoperable:
 1. Restore the protective device(s) to OPERABLE status or deenergize the circuit(s) by tripping, racking out, or removing the alternate device or racking out or removing the inoperable device within 72 hours, and
 2. Declare the affected system or component inoperable, and
 3. Verify at least once per 7 days thereafter the alternate device is tripped, racked out, or removed, or the device is racked out or removed.

Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- b. The provisions of Specification 3.0.4 are not applicable to overcurrent devices which have the inoperable device racked out or removed or, which have the alternate device tripped, racked out, or removed.

SURVEILLANCE REQUIREMENTS

4.8.4.1 The above noted primary and backup containment penetration conductor overcurrent protective devices shall be demonstrated OPERABLE:

- a. ~~At least once per 18 months:~~ ← Add INSERT 1b

1. By verifying that the medium voltage (4-15 kV) circuit breakers are OPERABLE by selecting, on a rotating basis, at least 10% of the circuit breakers of each voltage level, and performing the following:
 - (a) A CHANNEL CALIBRATION of the associated protective relays, and
 - (b) An integrated system functional test which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and control circuits function as designed.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- (c) For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.
2. By selecting and functionally testing a representative sample of at least 10% of each type of lower voltage circuit breakers. Circuit breakers selected for functional testing shall be ~~selected on a rotating basis~~. Testing of these circuit breakers, except for those breakers with external trip devices,* shall consist of injecting a current in excess of the breakers' nominal setpoint and measuring the response time. The measured response time will be compared to the manufacturer's data to ensure that it is less than or equal to a value specified by the manufacturer. Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.
- b. ~~At least once per 60 months~~ by subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.

Add INSERT 1b

*Testing of these circuit breakers (i.e., the 480 volts power from low voltage switchgear) shall be performed in accordance with the manufacturer's recommendations.

ELECTRICAL POWER SYSTEMS

MOTOR-OPERATED VALVES THERMAL OVERLOAD PROTECTION AND BYPASS DEVICES

LIMITING CONDITION FOR OPERATION

3.8.4.2 The thermal overload protection and bypass devices, integral with the motor starter, of each valve used in safety systems shall be OPERABLE. +

APPLICABILITY: Whenever the motor operated valve is required to be OPERABLE.

ACTION:

With one or more of the thermal overload protection and/or bypass devices inoperable, declare the affected valve(s) inoperable and apply the appropriate ACTION Statement(s) for the affected valve(s).

SURVEILLANCE REQUIREMENTS

4.8.4.2 The above required thermal overload protection and bypass devices shall be demonstrated OPERABLE.

- a. ~~At least once per 18 months~~, by the performance of a CHANNEL FUNCTIONAL TEST of the ~~bypass~~ circuitry for those thermal overload devices which are either:
1. Continuously bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing, or
2. Normally in force during plant operation ~~and bypassed under accident conditions.~~ Add INSERT 1b
- b. ~~At least once per 18 months~~ by the performance of a CHANNEL CALIBRATION of a representative sample of at least 25% of:
1. All thermal overload devices which are ~~not~~ bypassed, such that each nonbypassed device is calibrated ~~at least once per 6 years.~~ Add INSERT 1a
2. All thermal overload devices which are continuously bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing, and thermal overload devices normally in force and bypassed under accident conditions such that each thermal overload is calibrated and each valve is cycled through at least one complete cycle of full travel with the motor-operator when the thermal overload is OPERABLE and not bypassed, ~~at least once per 6 years.~~

3/4.9 REFUELING OPERATIONS

3/4.9.1 BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.1 With the reactor vessel head closure bolts less than fully tensioned or with the head removed, the boron concentration of all filled portions of the Reactor Coolant System and the refueling canal shall be maintained uniform and sufficient to ensure that the more restrictive of the reactivity conditions specified in the COLR is met.

APPLICABILITY: MODE 6*.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate action to restore boron concentration to within COLR limits.

SURVEILLANCE REQUIREMENTS

4.9.1.1 The more restrictive of the above two reactivity conditions shall be determined prior to:

- a. Removing or unbolting the reactor vessel head, and
- b. Withdrawal of any CEA in excess of 3 feet from its fully inserted position within the reactor pressure vessel.

4.9.1.2 The boron concentration of the Reactor Coolant System and the refueling canal shall be determined by chemical analysis ~~at least once per 72 hours~~.

← Add INSERT 1a

*The reactor shall be maintained in MODE 6 whenever fuel is in the reactor vessel with the reactor vessel head closure bolts less than fully tensioned or with the head removed.

REFUELING OPERATIONS

3/4.9.2 INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.9.2 As a minimum, two source range neutron flux monitors shall be OPERABLE and operating, each with continuous visual indication in the control room and one with audible indication in the containment and control room.

APPLICABILITY: MODE 6.

ACTION:

- a. With one of the above required monitors inoperable or not operating, immediately suspend all operations involving CORE ALTERATIONS or operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of Technical Specification 3.9.1.
- b. With both of the above required monitors inoperable or not operating, determine the boron concentration of the Reactor Coolant System at least once per 12 hours.

SURVEILLANCE REQUIREMENTS

4.9.2 Each source range neutron flux monitor shall be demonstrated OPERABLE by performance of:

- a. A CHANNEL CHECK ~~at least once per 12 hours,~~
- b. A CHANNEL FUNCTIONAL TEST within 8 hours prior to the initial start of CORE ALTERATIONS, and
- c. A CHANNEL FUNCTIONAL TEST ~~at least once per 7 days.~~

Add INSERT 1a

REFUELING OPERATIONS

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

- a. The equipment door is closed,
- b. A minimum of one door in each airlock is capable of being closed, and
- c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:
 1. Closed by a manual or automatic isolation valve, blind flange, or equivalent, or
 2. Capable of being closed by an OPERABLE containment purge and exhaust isolation system.

Note: Penetration flow path(s) described in a, b, and c above, that provides direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

APPLICABILITY: During CORE ALTERATIONS or load movements with or over irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or load movements with or over irradiated fuel in the containment building.

SURVEILLANCE REQUIREMENTS

4.9.4.1 Verify each required containment penetration is in the required status prior to the start of and once per 7 days during CORE ALTERATIONS or load movements with or over irradiated fuel within containment.

Add INSERT 1a

4.9.4.2 Verify each required containment purge and exhaust valve actuates to the isolation position on an actual or simulated actuation signal 72 hours prior to performing initial CORE ALTERATIONS or load movements with or over irradiated fuel within containment.

NOTE - SR 4.9.4.2 is not required to be met for containment purge and exhaust valve(s) in penetrations closed to comply with LCO 3.9.4.c.1.

REFUELING OPERATIONS

3/4.9.8 SHUTDOWN COOLING AND COOLANT CIRCULATION

HIGH WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.1 At least one shutdown cooling train shall be OPERABLE and in operation.*

APPLICABILITY: MODE 6 when the water level above the top of the fuel seated in the reactor pressure vessel is greater than or equal to 23 feet.

ACTION:

With no shutdown cooling train OPERABLE and in operation, suspend all operations involving an increase in the reactor decay heat load or operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of Technical Specification 3.9.1 and immediately initiate corrective action to return the required shutdown cooling train to OPERABLE and operating status. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

SURVEILLANCE REQUIREMENTS

4.9.8.1 At least one shutdown cooling train shall be verified to be in operation and circulating reactor coolant at a flow rate of greater than or equal to 4000 gpm** ~~at least once per 12 hours.~~

← Add INSERT 1a

*The shutdown cooling loop may be removed from operation for up to 1 hour per 8-hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel hot legs, provided no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the minimum required boron concentration of Technical Specification 3.9.1.

**The minimum flow may be reduced to 3000 gpm after the reactor has been shut down for greater than or equal to 175 hours or by verifying at least once per hour that the RCS temperature is less than 135°F. The minimum flow may be reduced to 2000 gpm after the reactor has been shut down for greater than or equal to 375 hours.

REFUELING OPERATIONS

LOW WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.2 Two[#] independent shutdown cooling trains shall be OPERABLE and at least one shutdown cooling train shall be in operation.*

APPLICABILITY: MODE 6 when the water level above the top of the fuel seated in the reactor pressure vessel is less than 23 feet.

ACTION:

- a. With one of the required shutdown cooling trains inoperable, immediately initiate corrective action to return the required train to OPERABLE status, or to establish greater than or equal to 23 feet of water above the top of the fuel seated in the reactor pressure vessel.
- b. With no shutdown cooling train OPERABLE and in operation, suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of Technical Specification 3.9.1 and immediately initiate corrective action to return the required shutdown cooling train to OPERABLE and operating status. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

SURVEILLANCE REQUIREMENTS

4.9.8.2 At least one shutdown cooling train shall be verified to be in operation and circulating reactor coolant at a flow rate of greater than or equal to 4000 gpm** ~~at least once per 12 hours.~~

Add INSERT 1a

[#]Only one shutdown cooling train is required to be OPERABLE and in operation provided there are no irradiated fuel assemblies seated within the reactor pressure vessel.

*The shutdown cooling loop may be removed from operations for up to 1 hour per 8-hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel hot legs, provided no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the minimum required boron concentration of Technical Specification 3.9.1.

**The minimum flow may be reduced to 3000 gpm after the reactor has been shut down for greater than or equal to 175 hours or by verifying at least once per hour that the RCS temperature is less than 135°F. The minimum flow may be reduced to 2000 gpm after the reactor has been shut down for greater than or equal to 375 hours.

REFUELING OPERATIONS

3/4.9.10 WATER LEVEL - REACTOR VESSEL

FUEL ASSEMBLIES

LIMITING CONDITION FOR OPERATION

3.9.10.1 At least 23 feet of water shall be maintained over the top of the reactor pressure vessel flange.

APPLICABILITY: During movement of fuel assemblies within the reactor pressure vessel when either the fuel assemblies being moved or the fuel assemblies seated within the reactor pressure vessel are irradiated.

ACTION:

With the requirements of the above specification not satisfied, suspend all operations involving movement of fuel assemblies within the pressure vessel.

SURVEILLANCE REQUIREMENTS

4.9.10.1 The water level shall be determined to be at least its minimum required depth within 2 hours prior to the start of and ~~at least once per 24 hours~~ thereafter during movement of fuel assemblies.

Add INSERT 1a

REFUELING OPERATIONS

CEAs

LIMITING CONDITION FOR OPERATION

3.9.10.2 At least 23 feet of water shall be maintained over the top of the fuel seated in the reactor pressure vessel.

APPLICABILITY: During movement of CEAs within the reactor pressure vessel, when the fuel assemblies seated within the reactor pressure vessel are irradiated.

ACTION:

With the requirements of the above specification not satisfied, suspend all operations involving movement of CEAs within the pressure vessel.

SURVEILLANCE REQUIREMENTS

4.9.10.2 The water level shall be determined to be at least its minimum required depth within 2 hours prior to the start of and at ~~least once per 24 hours~~ thereafter during movement of CEAs.

Add INSERT 1a

REFUELING OPERATIONS

3/4.9.11 WATER LEVEL - SPENT FUEL POOL

LIMITING CONDITION FOR OPERATION

3.9.11 At least 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: Whenever irradiated fuel assemblies are in the spent fuel pool.

ACTION:

With the requirement of the specification not satisfied, suspend all movement of fuel assemblies and crane operations with loads in the fuel storage areas and restore the water level to within its limit within 4 hours.

SURVEILLANCE REQUIREMENTS

4.9.11 The water level in the spent fuel pool shall be determined to be at least its minimum required depth ~~at least once per 7 days~~ when irradiated fuel assemblies are in the spent fuel pool.

Add INSERT 1a

REFUELING OPERATIONS

3/4.9.12 SPENT FUEL POOL (SFP) BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.12 The spent fuel pool boron concentration shall be ≥ 1900 ppm.

APPLICABILITY: When fuel assemblies are stored in the SFP.

ACTION:

- a. With the spent fuel pool boron concentration not within limits immediately suspend movement of fuel in the SFP and immediately initiate actions to restore boron concentration to within limits.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12 Verify the spent fuel pool concentration is within limits ~~once per 7 days~~.

↖
Add INSERT 1a

3/4.10 SPECIAL TEST EXCEPTIONS

3/4.10.1 SHUTDOWN MARGIN

LIMITING CONDITION FOR OPERATION

3.10.1 The SHUTDOWN MARGIN requirement of Specification 3.1.1.1 or 3.1.1.2 may be suspended for measurement of CEA worth and SHUTDOWN MARGIN provided reactivity equivalent to at least the highest estimated CEA worth is available for trip insertion from OPERABLE CEA(s).

APPLICABILITY: MODES 2 AND 3*.

ACTION:

- a. With any CEA not fully inserted and with less than the above reactivity equivalent available for trip insertion, immediately initiate boration to restore the SHUTDOWN MARGIN required by Specification 3.1.1.1.
- b. With all CEAs fully inserted and the reactor subcritical by less than the above reactivity equivalent, immediately initiate boration to restore the SHUTDOWN MARGIN required by Specification 3.1.1.2.

SURVEILLANCE REQUIREMENTS

4.10.1.1 The position of each CEA required either partially or fully withdrawn shall be determined ~~at least once per 2 hours.~~ ← Add INSERT 1a

4.10.1.2 Each CEA not fully inserted shall be demonstrated capable of full insertion when tripped from at least the 50% withdrawn position within 7 days prior to reducing the SHUTDOWN MARGIN to less than the limits of Specification 3.1.1.1.

*Operation in MODE 3 shall be limited to 6 consecutive hours.

SPECIAL TEST EXCEPTIONS

3/4.10.2 MODERATOR TEMPERATURE COEFFICIENT, GROUP HEIGHT, INSERTION, AND POWER DISTRIBUTION LIMITS

LIMITING CONDITION FOR OPERATION

3.10.2 The moderator temperature coefficient, group height, insertion, and power distribution limits of Specifications 3.1.1.3, 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.2, 3.2.3, 3.2.7, and the Minimum Channels OPERABLE requirement of Functional Unit 15 of Table 3.3-1 may be suspended during the performance of PHYSICS TESTS provided:

- a. The THERMAL POWER is restricted to the test power plateau which shall not exceed 85% of RATED THERMAL POWER, and
- b. The limits of Specification 3.2.1 are maintained and determined as specified in Specification 4.10.2.2 below.

APPLICABILITY: MODES 1 and 2.

ACTION:

With any of the limits of Specification 3.2.1 being exceeded while the requirements of Specifications 3.1.1.3, 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.2, 3.2.3, 3.2.7, and the Minimum Channels OPERABLE requirement of Functional Unit 15 of Table 3.3-1 are suspended, either:

- a. Reduce THERMAL POWER sufficiently to satisfy the requirements of Specification 3.2.1, or
- b. Be in HOT STANDBY within 6 hours.

Add INSERT 1a

SURVEILLANCE REQUIREMENTS

4.10.2.1 The THERMAL POWER shall be determined ~~at least once per hour~~ during PHYSICS TESTS in which the requirements of Specifications 3.1.1.3, 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.2, 3.2.3, 3.2.7, or the Minimum Channels OPERABLE requirement of Functional Unit 15 of Table 3.3-1 are suspended and shall be verified to be within the test power plateau.

4.10.2.2 The linear heat rate shall be determined to be within the limits of Specification 3.2.1 by monitoring it continuously with the Incore Detection Monitoring System pursuant to the requirements of Specifications 4.2.1.2 during PHYSICS TESTS above 5% of RATED THERMAL POWER in which the requirements of Specifications 3.1.1.3, 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.2, 3.2.3, 3.2.7, or the Minimum Channels OPERABLE requirement of Functional Unit 15 of Table 3.3-1 are suspended.

SPECIAL TEST EXCEPTIONS

3/4.10.3 REACTOR COOLANT LOOPS

LIMITING CONDITION FOR OPERATION

3.10.3 The noted requirements of Tables 2.2-1 and 3.3-1 may be suspended during the performance of startup and PHYSICS TESTS, provided:

- a. The THERMAL POWER does not exceed 5% of RATED THERMAL POWER, and either
- b. The reactor trip setpoints of the OPERABLE power level channels are set at less than or equal to 20% of RATED THERMAL POWER, or
- c. The core protection calculator operating bypass permissive setpoints are increased to greater than the logarithmic power-hi trip setpoint specified in Table 2.2-1 and less than 5% RATED THERMAL POWER.

APPLICABILITY: During startup and PHYSICS TESTS.

ACTION:

With the THERMAL POWER greater than 5% of RATED THERMAL POWER, immediately trip the reactor.

Add INSERT 1a

SURVEILLANCE REQUIREMENTS

4.10.3.1 The THERMAL POWER shall be determined to be less than or equal to 5% of RATED THERMAL POWER at least once per hour during startup and PHYSICS TESTS.

4.10.3.2 Each wide range logarithmic and power level neutron flux monitoring channel shall be subjected to a CHANNEL FUNCTIONAL TEST within 12 hours prior to initiating startup and PHYSICS TESTS.

SPECIAL TEST EXCEPTIONS

3/4.10.5 NATURAL CIRCULATION TESTING

LIMITING CONDITION FOR OPERATION

3.10.5 The limitation of Specification 3.4.1.2 may be suspended during the performance of natural circulation testing, provided the Reactor Coolant System saturation margin is maintained greater than or equal to 20°F.

APPLICABILITY: MODE 3 during natural circulation testing.

ACTION:

With the Reactor Coolant System saturation margin less than 20°F, immediately place at least one reactor coolant loop in operation, with at least one reactor coolant pump.

SURVEILLANCE REQUIREMENTS

4.10.5.1 The saturation margin shall be determined to be within the above limits by continuous monitoring with the saturation margin monitors required by Table 3.3-10 or, by calculating the saturation margin ~~at least once per 30 minutes.~~

Add INSERT 1a

4.10.5.2 The saturation margin monitor shall be demonstrated OPERABLE by performance of a CHANNEL CHECK within 24 hours prior to initiating natural circulation testing.

RADIOACTIVE EFFLUENTS

GAS STORAGE TANKS

LIMITING CONDITION OR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to 8.5×10^4 curies noble gases (considered as Xe-133 equivalent).

APPLICABILITY: At all times.

ACTION:

- a. With the quantity of radioactive material in any gas storage tanks exceeding the above limit, immediately suspend all additions of radioactive material to the tank. Within 48 hours reduce the tank contents to within the limits and describe the events leading to this condition in the next Radioactive Effluent Release Report, pursuant to Specification 6.9.1.8.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas storage tank on-service shall be determined to be within the above limit ~~at least once per 7 days~~ until the quantity exceeds 4.25×10^4 curies noble gases (50% of allowed limit) and then at least once per 24 hours when radioactive materials are being added to the tank. Tanks isolated for decay will be sampled to verify above limit is met within 24 hours following removal from service.

Add INSERT 1a

ADMINISTRATIVE CONTROLS

6.5.17 Control Room Envelope Habitability Program (Continued)

- a. The definition of the CRE and the CRE boundary.
- b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.
- c. Requirements for (i) determining the unfiltered air leakage past the CRE boundary into the CRE in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.
- d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the control room emergency air filtration, operating at the flow rate required by SR 4.7.6.1.b, ~~at a FREQUENCY of 18 months on a STAGGERED TEST BASIS.~~ The results shall be trended and used as part of the assessment of the CRE boundary. Add INSERT 1a
- e. The quantitative limits on unfiltered air leakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air leakage measured by the testing described in paragraph c. The unfiltered air leakage limit for radiological challenges is the leakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air leakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.
- f. The provisions of SR 4.0.2 are applicable to the FREQUENCIES for assessing CRE habitability, determining CRE unfiltered leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

← Add INSERT 3