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DEFINITIONS

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DEFINITIONS

SECTION PAGE

1.0 DEFINITIONS

TABLE 2.2-1 (Continued)

REACTOR PROTECTIVE INSTRUMENTATION TRIP SETPOINT LIMITS

TABLE NOTATIONS (Continued)

(6) RATE is the maximum rate of decrease of the trip setpoint. There are no restrictions on the rate at which the setpoint can increase.
FLOOR is the minimum value of the trip setpoint.
BAND is the amount by which the trip setpoint is below the input signal unless limited by Rate or Floor.
Setpoints are based on steam generator differential pressure.

(7) The setpoint may be altered to disable trip function during testing pursuant to Specification 3.10.3.

(8) RATE is the maximum rate of increase of the trip setpoint. (The rate at which the setpoint can decrease is no slower than five percent per second.)
CEILING is the maximum value of the trip setpoint.
BAND is the amount by which the trip setpoint is above the steady state input signal unless limited by the rate or the ceiling.

(9) % of the distance between steam generator upper and lower level narrow range instrument nozzles.

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

MINIMUM TEMPERATURE FOR CRITICALITY

LIMITING CONDITION FOR OPERATION

3.1.1.4 The Reactor Coolant System lowest operating loop temperature (T_{cold}) shall be greater than or equal to 552°F.

APPLICABILITY: MODES 1 and 2#(*).

ACTION:

With a Reactor Coolant System operating loop temperature (T_{cold}) less than 552°F, restore T_{cold} to within its limit within 15 minutes or be in HOT STANDBY within the next 15 minutes.

SURVEILLANCE REQUIREMENTS

4.1.1.4 The Reactor Coolant System temperature (T_{cold}) shall be determined to be greater than or equal to 552°F:

a. Within 15 minutes prior to achieving reactor criticality, and

b. At least once per 30 minutes when the reactor is critical and the Reactor Coolant System T_{cold} is less than 557°F.

#With K_{eff} greater than or equal to 1.0.

*See Special Test Exception 3.10.5.

MINIMUM TEMPERATURE FOR CRITICALITY

LIMITING CONDITION FOR OPERATION

3.1.1.4 The Reactor Coolant System lowest operating loop temperature (T_{cold}) shall be greater than or equal to 552°F.

APPLICABILITY: MODES 1 and 2#*.

ACTION:

With a Reactor Coolant System operating loop temperature (T_{cold}) less than 552°F, restore T_{cold} to within its limit within 15 minutes or be in HOT STANDBY within the next 15 minutes.

SURVEILLANCE REQUIREMENTS

4.1.1.4 The Reactor Coolant System temperature (T_{cold}) shall be determined to be greater than or equal to 552°F:

a. Within 15 minutes prior to achieving reactor criticality, and

b. At least once per 30 minutes when the reactor is critical and the Reactor Coolant System T_{cold} is less than 557°F.

#With K_{eff} greater than or equal to 1.0.

*See Special Test Exception 3.10.5.

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MINIMUM TEMPERATURE FOR CRITICALITY

LIMITING CONDITION FOR OPERATION

3.1.1.4 The Reactor Coolant System lowest operating loop temperature (T_{cold}) shall be greater than or equal to 552°F.

APPLICABILITY: MODES 1 and 2#*.

ACTION:

With a Reactor Coolant System operating loop temperature (T_{cold}) less than 552°F, restore T_{cold} to within its limit within 15 minutes or be in HOT STANDBY within the next 15 minutes.

SURVEILLANCE REQUIREMENTS

4.1.1.4 The Reactor Coolant System temperature (T_{cold}) shall be determined to be greater than or equal to 552°F:

a. Within 15 minutes prior to achieving reactor criticality, and

b. At least once per 30 minutes when the reactor is critical and the Reactor Coolant System T_{cold} is less than 557°F.

#With K_{eff} greater than or equal to 1.0.

*See Special Test Exception 3.10.5.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

b) The SHUTDOWN MARGIN requirement of Specification 3.1.1.2 is determined at least once per 12 hours.

Otherwise, be in at least HOT STANDBY within 6 hours.

d. With one full-length CEA inoperable due to causes other than addressed by ACTION a., above, but within its above specified alignment requirements, operation in MODES 1 and 2 may continue pursuant to the requirements of Specification 3.1.3.6.

e. With one part-length CEA inoperable and inserted in the core, operation may continue provided the alignment of the inoperable part length CEA is maintained within 6.6 inches (indicated position) of all other part-length CEAs in its group and the CEA is maintained pursuant to the requirements of Specification 3.1.3.7.

SURVEILLANCE REQUIREMENTS

4.1.3.1.1 The position of each full-length and part-length CEA shall be determined to be within 6.6 inches (indicated position) of all other CEAs in its group at least once per 12 hours except during time intervals when one CEAC is inoperable or when both CEACs are inoperable, then verify the individual CEA positions at least once per 4 hours.

4.1.3.1.2 Each full-length CEA not fully inserted and each part-length CEA which is inserted in the core shall be determined to be OPERABLE by movement of at least 5 inches in any one direction at least once per 31 days.*

6

*With the exception that CEA #64 is exempt from this surveillance requirement for the remainder of Cycle 2 operations (i.e., until restart from the second refueling outage).

ACTION: (Continued)

b) The SHUTDOWN MARGIN requirement of Specification 3.1.1.2 is determined at least once per 12 hours.

Otherwise, be in at least HOT STANDBY within 6 hours.

d. With one full-length CEA inoperable due to causes other than addressed by ACTION a., above, but within its above specified alignment requirements, operation in MODES 1 and 2 may continue pursuant to the requirements of Specification 3.1.3.6.

e. With one part-length CEA inoperable and inserted in the core, operation may continue provided the alignment of the inoperable part length CEA is maintained within 6.6 inches (indicated position) of all other part-length CEAs in its group and the CEA is maintained pursuant to the requirements of Specification 3.1.3.7.

SURVEILLANCE REQUIREMENTS

4.1.3.1.1 The position of each full-length and part-length CEA shall be determined to be within 6.6 inches (indicated position) of all other CEAs in its group at least once per 12 hours except during time intervals when one CEAC is inoperable or when both CEACs are inoperable, then verify the individual CEA positions at least once per 4 hours.

4.1.3.1.2 Each full-length CEA not fully inserted and each part-length CEA which is inserted in the core shall be determined to be OPERABLE by movement of at least 5 inches in any one direction at least once per 31 days.*

*With the exception that CEAs 27 and 41 are exempt from this surveillance requirement until restart from the second refueling outage.

3/4.2.8 PRESSURIZER PRESSURE

LIMITING CONDITION FOR OPERATION

3.2.8 The pressurizer pressure shall be maintained between 2025 psia and 2300 psia.

APPLICABILITY: MODES 1 and 2*.

ACTION:

With the pressurizer pressure outside its above limits, restore the pressure to within its limit within 2 hours or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.2.8 The pressurizer pressure shall be determined to be within its limit at least once per 12 hours.

*See Special Test Exception 3.10.5

3/4.2.8 PRESSURIZER PRESSURE

LIMITING CONDITION FOR OPERATION

3.2.8 The pressurizer pressure shall be maintained between 2025 psia and 2300 psia.

APPLICABILITY: MODES 1 and 2*.

ACTION:

With the pressurizer pressure outside its above limits, restore the pressure to within its limit within 2 hours or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.2.8 The pressurizer pressure shall be determined to be within its limit at least once per 12 hours.

*See Special Test Exception 3.10.5

3/4.2.8 PRESSURIZER PRESSURE

LIMITING CONDITION FOR OPERATION

3.2.8 The pressurizer pressure shall be maintained between 2025 psia and 2300 psia.

APPLICABILITY: MODES 1 and 2*.

ACTION:

With the pressurizer pressure outside its above limits, restore the pressure to within its limit within 2 hours or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.2.8 The pressurizer pressure shall be determined to be within its limit at least once per 12 hours.

*See Special Test Exception 3.10.5

TABLE 4.3-1 (Continued)

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TABLE NOTATIONS

* - With reactor trip breakers in the closed position and the CEA drive system capable of CEA withdrawal, and fuel in the reactor vessel.

(1) - Each STARTUP or when required with the reactor trip breakers closed and the CEA drive system capable of rod withdrawal, if not performed in the previous 7 days.

(2) - Heat balance only (CHANNEL FUNCTIONAL TEST not included), above 15% of RATED THERMAL POWER; adjust the linear power level, the CPC delta T power and CPC nuclear power signals to agree with the calorimetric calculation if absolute difference is greater than 2%. During PHYSICS TESTS, these daily calibrations may be suspended provided these calibrations are performed upon reaching each major test power plateau and prior to proceeding to the next major test power plateau.

(3) - Above 15% of RATED THERMAL POWER, verify that the linear power subchannel gains of the excore detectors are consistent with the values used to establish the shape annealing matrix elements in the Core Protection Calculators.

(4) - Neutron detectors may be excluded from CHANNEL CALIBRATION.

(5) - After each fuel loading and prior to exceeding 70% of RATED THERMAL POWER, the incore detectors shall be used to determine the shape annealing matrix elements and the Core Protection Calculators shall use these elements.

(6) - This CHANNEL FUNCTIONAL TEST shall include the injection of simulated process signals into the channel as close to the sensors as practicable to verify OPERABILITY including alarm and/or trip functions.

(7) - Above 70% of RATED THERMAL POWER, verify that the total steady-state RCS flow rate as indicated by each CPC is less than or equal to the actual RCS total flow rate determined by either using the reactor coolant pump differential pressure instrumentation or by calorimetric calculations and if necessary, adjust the CPC addressable constant flow coefficients such that each CPC indicated flow is less than or equal to the actual flow rate. The flow measurement uncertainty may be included in the BERR1 term in the CPC and is equal to or greater than 4%.

(8) - Above 70% of RATED THERMAL POWER, verify that the total steady-state RCS flow rate as indicated by each CPC is less than or equal to the actual RCS total flow rate determined by either using the reactor coolant pump differential pressure instrumentation and the ultrasonic flow meter adjusted pump curves or calorimetric calculations.

(9) - The monthly CHANNEL FUNCTIONAL TEST shall include verification that the correct (current) values of addressable constants are installed in each OPERABLE CPC.

(10) - At least once per 18 months and following maintenance or adjustment of the reactor trip breakers, the CHANNEL FUNCTIONAL TEST shall include independent verification of the undervoltage and shunt trips.

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TABLE 4.3-1 (Continued)

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TABLE NOTATIONS

* - With reactor trip breakers in the closed position and the CEA drive system capable of CEA withdrawal, and fuel in the reactor vessel.

(1) - Each STARTUP or when required with the reactor trip breakers closed and the CEA drive system capable of rod withdrawal, if not performed in the previous 7 days.

(2) - Heat balance only (CHANNEL FUNCTIONAL TEST not included), above 15% of RATED THERMAL POWER; adjust the linear power level, the CPC delta T power and CPC nuclear power signals to agree with the calorimetric calculation if absolute difference is greater than 2%. During PHYSICS TESTS, these daily calibrations may be suspended provided these calibrations are performed upon reaching each major test power plateau and prior to proceeding to the next major test power plateau.

(3) - Above 15% of RATED THERMAL POWER, verify that the linear power subchannel gains of the excore detectors are consistent with the values used to establish the shape annealing matrix elements in the Core Protection Calculators.

(4) - Neutron detectors may be excluded from CHANNEL CALIBRATION.

(5) - After each fuel loading and prior to exceeding 70% of RATED THERMAL POWER, the incore detectors shall be used to determine the shape annealing matrix elements and the Core Protection Calculators shall use these elements.

(6) - This CHANNEL FUNCTIONAL TEST shall include the injection of simulated process signals into the channel as close to the sensors as practicable to verify OPERABILITY including alarm and/or trip functions.

(7) - Above 70% of RATED THERMAL POWER, verify that the total steady-state RCS flow rate as indicated by each CPC is less than or equal to the actual RCS total flow rate determined by either using the reactor coolant pump differential pressure instrumentation or by calorimetric calculations and if necessary, adjust the CPC addressable constant flow coefficients such that each CPC indicated flow is less than or equal to the actual flow rate. The flow measurement uncertainty may be included in the BERR1 term in the CPC and is equal to or greater than 4%.

(8) - Above 70% of RATED THERMAL POWER, verify that the total steady-state RCS flow rate as indicated by each CPC is less than or equal to the actual RCS total flow rate determined by either using the reactor coolant pump differential pressure instrumentation and the ultrasonic flow meter adjusted pump curves or calorimetric calculations.

(9) - The monthly CHANNEL FUNCTIONAL TEST shall include verification that the correct (current) values of addressable constants are installed in each OPERABLE CPC.

(10) - At least once per 18 months and following maintenance or adjustment of the reactor trip breakers, the CHANNEL FUNCTIONAL TEST shall include independent verification of the undervoltage and shunt trips.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. Area Monitors					
A. Fuel Pool Area RU-31	1	**	≤15mR/hr	10^{-1} to 10^{4}mR/hr	22 & 24
B. New Fuel Area RU-19	1	*	≤15mR/hr	10^{-1} to 10^{4}mR/hr	22
C. Containment RU-148 & RU-149	2	1,2,3,4	≤10R/hr	1R/hr to 10^{7}R/hr	27
D. Containment Power Access Purge Exhaust RU-37 & RU-38	1	#	≤2.5mR/hr	10^{-1} to 10^{4}mR/hr	25
E. Main Steam					
1) RU-139 A&B	1	1,2,3,4	##	10^{0} to 10^{5}mR/hr	27
2) RU-140 A&B	1	1,2,3,4	##	10^{0} to 10^{5}mR/hr	27
2. Process Monitors					
A. Containment Building Atmosphere RU-1	2	1,2,3,4			23 & 27
1) Particulate			≤2.3×10^{-6}μCi/cc Cs-137	10^{-9} to 10^{-4}μCi/cc	
2) Gaseous			≤6.6×10^{-2}μCi/cc Xe-133	10^{-6} to 10^{-1}μCi/cc	
B. Noble Gas Monitors Control Room Ventilation Intake RU-29 & RU-30	1	ALL MODES	≤2×10^{-5}μCi/cc	10^{-6} to 10^{-1}μCi/cc	26
3. Post Accident Sampling System	1###	1,2,3	N.A.	N.A.	28

*With fuel in the storage pool or building.
**With irradiated fuel in the storage pool.
#When purge is being used.
##Three (3) times background in Rem/hour.
###The Minimum Channels Operable will be defined in the Preplanned Alternate Sampling Program.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. Area Monitors					
A. Fuel Pool Area RU-31	1	**	≤15mR/hr	10^{-1} to 10^{4}mR/hr	22 & 24
B. New Fuel Area RU-19	1	*	≤15mR/hr	10^{-1} to 10^{4}mR/hr	22
C. Containment RU-148 & RU-149	2	1,2,3,4	≤10R/hr	1R/hr to 10^{7}R/hr	27
D. Containment Power Access Purge Exhaust RU-37 & RU-38	1	#	≤2.5mR/hr	10^{-1} to 10^{-4}mR/hr	25
E. Main Steam					
1) RU-139 A&B	1	1,2,3,4	##	10^{0} to 10^{5}mR/hr	27
2) RU-140 A&B	1	1,2,3,4	##	10^{0} to 10^{5}mR/hr	27
2. Process Monitors					
A. Containment Building Atmosphere RU-1	2	1,2,3,4			23 & 27
1) Particulate			≤2.3×10^{-6}μCi/cc Cs-137	10^{-9} to 10^{-4}μCi/cc	
2) Gaseous			≤6.6×10^{-2}μCi/cc Xe-133	10^{-6} to 10^{-1}μCi/cc	
B. Noble Gas Monitors Control Room Ventilation Intake RU-29 & RU-30	1	ALL MODES	≤2×10^{-5}μCi/cc	10^{-6} to 10^{-1}μCi/cc	26
3. Post Accident Sampling System	1###	1,2,3	N.A.	N.A.	28

*With fuel in the storage pool or building.
**With irradiated fuel in the storage pool.
#When purge is being used.
##Three (3) times background in Rem/hour.
###The Minimum Channels Operable will be defined in the Preplanned Alternate Sampling Program.

INSTRUMENTATION

REMOTE SHUTDOWN SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown system disconnect switches, power, controls and monitoring instrumentation channels shown in Table s 3.3-9 A-C shall be OPERABLE. X

APPLICABILITY: MODES 1 and 2.

ACTION:

a. With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9 A-C, restore the inoperable channel(s) to OPERABLE status within 7 days, or be in HOT STANDBY within the next 12 hours. X

b. With one or more remote shutdown (listed in tables 3.3-9B and 3.3-9C) system disconnect switches or power or control circuits inoperable, restore the inoperable switch(s)/ circuit(s) to OPERABLE status or issue procedure changes per Specification 6.8.3 that identifies alternate disconnect methods or power or control circuits for remote shutdown within 7 days, or be in HOT STANDBY within the next 12 hours. X

c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.5 The Remote Shutdown System shall be demonstrated operable:

a. By performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6 for each remote shutdown monitoring instrumentation channel.

b. By operation of each remote shutdown system disconnect switch and power and control circuit including the actuated components at least once per 18 months.

REMOTE SHUTDOWN SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown system disconnect switches, power, controls and monitoring instrumentation channels shown in Table 3.3-9A-C shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

a. With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9A-C, restore the inoperable channel(s) to OPERABLE status within 7 days, or be in HOT STANDBY within the next 12 hours.

b. With one or more remote shutdown system disconnect switches or power or control circuits inoperable, restore the inoperable switch(s)/circuit(s) to OPERABLE status or issue procedure changes per Specification 6.8.3 that identifies alternate disconnect methods or power or control circuits for remote shutdown within 7 days, or be in HOT STANDBY within the next 12 hours.

c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.5 The Remote Shutdown System shall be demonstrated operable:

a. By performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6 for each remote shutdown monitoring instrumentation channel.

b. By operation of each remote shutdown system disconnect switch and power and control circuit including the actuated components at least once per 18 months.

TABLE 3.3-9B

REMOTE SHUTDOWN DISCONNECT SWITCHES

DISCONNECT SWITCHES	SWITCH LOCATION
1. SG 1 line 2 Atmospheric Dump Valve Solenoid Air Isolation Valves SGB-HY-178A and SGB-HY-178R	RSP
2. SG 2 line 1 Atmospheric Dump Valve Solenoid Air Isolation Valves SGB-HY-185A and SGB-HY-185R	RSP
3. Auxiliary Spray Valve CHB-HV-203	RSP
4. Letdown to Regenerative Heat Exchanger Isolation, CHB-UV-515	RSP
5. Reactor Coolant Pump Controlled Bleedoff, CHB-UV-505	RSP
6. Auxiliary Feedwater Pump B to SG 1 Control Valve, AFB-HV-30	RSP
7. Auxiliary Feedwater Pump B to SG 2 Control Valve, AFB-HV-31	RSP
8. Auxiliary Feedwater Pump B to SG 1 Block Valve, AFB-UV-34	RSP
9. Auxiliary Feedwater Pump B to SG 2 Block Valve, AFB-UV-35	RSP
10. Pressurizer Backup Heaters Banks B10, B18, A05 Control	RSP
11. Safety Injection Tank 2A Vent Control SIB-HV-613	RSP
12. Safety Injection Tank 2B Vent Control SIB-HV-623	RSP
13. Safety Injection Tank 1A Vent Control SIB-HV-633	RSP
14. Safety Injection Tank 1B Vent Control SIB-HV-643	RSP
15. Safety Injection Tank Vent Valves Power Supply SIB-HS-18A	RSP
16. SG 1 line 2 Atmospheric Dump Valve Solenoid Air Isolation Valves SGD-HY-178B and SGD-HY-178S	RSP
17. SG 2 line 1 Atmospheric Dump Valve Solenoid Air Isolation Valves SGD-HY-185B and SGD-HY-185S	RSP
18. Control BLDG Battery Room D Essential Exhaust Fan 'HJB-J01A'	PHB-M3205
19. Control BLDG Battery Room B Essential Exhaust Fan 'HJB-J01B'	PHB-M3205
20. Battery Charger D Control Room Circuits PKD-H14	PHB-M3209 AND PKD-H14
21. ESF Switchgear Room Essential AHU HJB-Z03	PHB-M3205
22. LPSI Pump SIB-P01 Breaker Control	PBB-S04F
23. Diesel Generator B Breaker Control	PBB-S04B
24. Essential Spray Pond Pump SPB-P01 Breaker Control	PBB-S04C

C X

TABLE 3.3-9B

REMOTE SHUTDOWN DISCONNECT SWITCHES

DISCONNECT SWITCHES	SWITCH LOCATION
1. SG 1 line 2 Atmospheric Dump Valve Solenoid Air Isolation Valves SGB-HY-178A and SGB-HY-178R	RSP
2. SG 2 line 1 Atmospheric Dump Valve Solenoid Air Isolation Valves SGB-HY-185A and SGB-HY-185R	RSP
3. Auxiliary Spray Valve CHB-HV-203	RSP
4. Letdown to Regenerative Heat Exchanger Isolation, CHB-UV-515	RSP
5. Reactor Coolant Pump Controlled Bleedoff, CHB-UV-505	RSP
6. Auxiliary Feedwater Pump B to SG 1 Control Valve, AFB-HV-30	RSP
7. Auxiliary Feedwater Pump B to SG 2 Control Valve, AFB-HV-31	RSP
8. Auxiliary Feedwater Pump B to SG 1 Block Valve, AFB-UV-34	RSP
9. Auxiliary Feedwater Pump B to SG 2 Block Valve, AFB-UV-35	RSP
10. Pressurizer Backup Heaters Banks B10, B18, A05 Control	RSP
11. Safety Injection Tank 2A Vent Control SIB-HV-613	RSP
12. Safety Injection Tank 2B Vent Control SIB-HV-623	RSP
13. Safety Injection Tank 1A Vent Control SIB-HV-633	RSP
14. Safety Injection Tank 1B Vent Control SIB-HV-643	RSP
15. Safety Injection Tank Vent Valves Power Supply SIB-HS-18A (C)	RSP
16. SG 1 line 2 Atmospheric Dump Valve Solenoid Air Isolation Valves SGD-HY-178B and SGD-HY-178S	RSP
17. SG 2 line 1 Atmospheric Dump Valve Solenoid Air Isolation Valves SGD-HY-185B and SGD-HY-185S	RSP
18. Control BLDG Battery Room D Essential Exhaust Fan 'HJB-J01A'	PHB-M3205
19. Control BLDG Battery Room B Essential Exhaust Fan 'HJB-J01B'	PHB-M3205
20. Battery Charger D Control Room Circuits PKD-H14	PHB-M3209 AND PKD-H14
21. ESF Switchgear Room Essential AHU HJB-Z03	PHB-M3205
22. LPSI Pump SIB-P01 Breaker Control	PBB-S04F
23. Diesel Generator B Breaker Control	PBB-S04B
24. Essential Spray Pond Pump SPB-P01 Breaker Control	PBB-S04C

X

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TABLE 3.3-9B

REMOTE SHUTDOWN DISCONNECT SWITCHES

DISCONNECT SWITCHES	SWITCH LOCATION
1. SG 1 line 2 Atmospheric Dump Valve Solenoid Air Isolation Valves SGB-HY-178A and SGB-HY-178R	RSP
2. SG 2 line 1 Atmospheric Dump Valve Solenoid Air Isolation Valves SGB-HY-185A and SGB-HY-185R	RSP
3. Auxiliary Spray Valve CHB-HV-203	RSP
4. Letdown to Regenerative Heat Exchanger Isolation, CHB-UV-515	RSP
5. Reactor Coolant Pump Controlled Bleedoff, CHB-UV-505	RSP
6. Auxiliary Feedwater Pump B to SG 1 Control Valve, AFB-HV-30	RSP
7. Auxiliary Feedwater Pump B to SG 2 Control Valve, AFB-HV-31	RSP
8. Auxiliary Feedwater Pump B to SG 1 Block Valve, AFB-UV-34	RSP
9. Auxiliary Feedwater Pump B to SG 2 Block Valve, AFB-UV-35	RSP
10. Pressurizer Backup Heaters Banks B10, B18, A05 Control	RSP
11. Safety Injection Tank 2A Vent Control SIB-HV-613	RSP
12. Safety Injection Tank 2B Vent Control SIB-HV-623	RSP
13. Safety Injection Tank 1A Vent Control SIB-HV-633	RSP
14. Safety Injection Tank 1B Vent Control SIB-HV-643	RSP
15. Safety Injection Tank Vent Valves Power Supply SIB-HS-18A	RSP
16. SG 1 line 2 Atmospheric Dump Valve Solenoid Air Isolation Valves SGD-HY-178B and SGD-HY-178S	RSP
17. SG 2 line 1 Atmospheric Dump Valve Solenoid Air Isolation Valves SGD-HY-185B and SGD-HY-185S	RSP
18. Control BLDG Battery Room D Essential Exhaust Fan 'HJB-J01A'	PHB-M3205
19. Control BLDG Battery Room B Essential Exhaust Fan 'HJB-J01B'	PHB-M3205
20. Battery Charger D Control Room Circuits PKD-H14	PHB-M3209 AND PKD-H14
21. ESF Switchgear Room Essential AHU HJB-Z03	PHB-M3205
22. LPSI Pump SIB-P01 Breaker Control	PBB-S04F
23. Diesel Generator B Breaker Control	PBB-S04B
24. Essential Spray Pond Pump SPB-P01 Breaker Control	PBB-S04C

TABLE 3.3-9B (continued)
REMOTE SHUTDOWN DISCONNECT SWITCHES

DISCONNECT SWITCHES	SWITCH LOCATION
50. LPSI-SD HX "B" Bypass SIB-HV-307	PHB-M3803
51. LPSI Pump "B" Recirc SIB-UV-668	PHB-M3611
52. LPSI Pump "B" Suction from RWT SIB-HV-692	PHB-M3805
53. SD Cooling LPSI Pump "B" Suction SIB-UV-652	PHB-M3611
54. SD Cooling LPSI Pump "B" Suction SIB-UV-654	PKD-B44
55. LPSI Header "B" to RC Loop 2A SIB-UV-615	PHB-M3611
56. LPSI Header "B" to RC Loop 2B SIB-UV-625	PHB-M3640
57. VCT Outlet Isolation CHN-UV-501	NHN-M7208
58. RWT Gravity Feed CHN-HV-536	NHN-M7209
59. Shutdown Cooling Temperature Control SIB-UV-658	PHB-M3416
60. Shutdown Cooling Heat Exchanger Bypass Valve SIB-HV-693	PHB-M3416
61. 4.16 KV Bus PBB-S04 Feeder from XFMR NBN-X04	PBB-S04K
62. 4.16 KV Bus PBB-S04 Feeder from XFMR NBN-X03	PBB-S04L
63. Electrical Penetration Room B ACU HAB-Z06	PHB-M3640
64. Control Room HVAC Isolation Dampers HJB-M01/HJB-M55	RSP
65. O.S.A. Supply Damper HJB-M02	RSP
66. O.S.A. Supply Damper HJB-M03	RSP
67. R.C.S. Sample Isolation Valve SSA-UV-203	SSA-J04
68. R.C.S. Sample Isolation Valve SSB-UV-200	RSP
69. 125 VDC Battery A Breaker Control Room Circuits	PKA-M4101

HV

X

TABLE 3.3-9B (Continued)

REMOTE SHUTDOWN DISCONNECT SWITCHES

DISCONNECT SWITCHES	SWITCH LOCATION
49. SD HX "B" to RC Loops 2A/2B SIB-HV-696	PHB-M3416
50. LPSI-SD HX "B" Bypass SIB-HV-307	PHB-M3803
51. LPSI Pump "B" Recirc SIB-UV-668	PHB-M3611
52. LPSI Pump "B" Suction from RWT SIB-HV-692	PHB-M3805
53. SD Cooling LPSI Pump "B" Suction SIB-UV-652	PHB-M3611
54. SD Cooling LPSI Pump "B" Suction SID-UV-654	PKD-B44
55. LPSI Header "B" to RC Loop 2A SIB-UV-615	PHB-M3611
56. LPSI Header "B" to RC Loop 2B SIB-UV-625	PHB-M3640
57. VCT Outlet Isolation CHN-UV-501	NHN-M7208
58. RWT Gravity Feed CHE-HV-536	NHN-M7209
59. Shutdown Cooling Temperature Control SIB-UV-658 (HV)	PHB-M3416
60. Shutdown Cooling Heat Exchanger Bypass Valve SIB-HV-693	PHB-M3416
61. 4.16 KV Bus PBB-S04 Feeder from XFMR NBN-X04	PBB-S04K
62. 4.16 KV Bus PBB-S04 Feeder from XFMR NBN-X03	PBB-S04L
63. Electrical Penetration Room B ACU HAB-Z06	PHB-M3640
64. Control Room HVAC Isolation Dampers HJB-M01/HJB-M55	RSP
65. O.S.A. Supply Damper HJB-M02	RSP
66. O.S.A. Supply Damper HJB-M03	RSP
67. R.C.S. Sample Isolation Valve SSA-UV-203	SSA-J04
68. R.C.S. Sample Isolation Valve SSB-UV-200	RSP
69. 125 VDC Battery A Breaker Control Room Circuits	PKA-M4101

X

CONTROLLED BY USER

TABLE 3.3-9B (Continued)

REMOTE SHUTDOWN DISCONNECT SWITCHES

DISCONNECT SWITCHES	SWITCH LOCATION
49. SD HX "B" to RC Loops 2A/2B SIB-HV-696	PHB-M3416
50. LPSI-SD HX "B" Bypass SIB-HV-307	PHB-M3803
51. LPSI Pump "B" Recirc SIB-UV-668	PHB-M3611
52. LPSI Pump "B" Suction from RWT SIB-HV-692	PHB-M3805
53. SD Cooling LPSI Pump "B" Suction SIB-UV-652	PHB-M3611
54. SD Cooling LPSI Pump "B" Suction SID-UV-654	PKD-B44
55. LPSI Header "B" to RC Loop 2A SIB-UV-615	PHB-M3611
56. LPSI Header "B" to RC Loop 2B SIB-UV-625	PHB-M3640
57. VCT Outlet Isolation CHN-UV-501	NHN-M7208
58. RWT Gravity Feed CHE-HV-536	NHN-M7209
59. Shutdown Cooling Temperature Control SIB-UV-658	PHB-M3416
60. Shutdown Cooling Heat Exchanger Bypass Valve SIB-HV-693	PHB-M3416
61. 4.16 KV Bus PBB-S04 Feeder from XFMR NBN-X04	PBB-S04K
62. 4.16 KV Bus PBB-S04 Feeder from XFMR NBN-X03	PBB-S04L
63. Electrical Penetration Room B ACU HAB-Z06	PHB-M3640
64. Control Room HVAC Isolation Dampers HJB-M01/HJB-M55	RSP
65. O.S.A. Supply Damper HJB-M02	RSP
66. O.S.A. Supply Damper HJB-M03	RSP
67. R.C.S. Sample Isolation Valve SSA-UV-203	SSA-J04
68. R.C.S. Sample Isolation Valve SSB-UV-200	RSP
69. 125 VDC Battery A Breaker Control Room Circuits	PKA-M4101

TABLE 3.3-9C (continued)
REMOTE SHUTDOWN CONTROL CIRCUITS

CONTROL CIRCUITS	SWITCH LOCATION
27. E-PGB-L36 480V Supply Breaker to Load Center PGB-L36	PGB-L36B1
28. Battery Charger PKB-H12 Supply Breaker	PHB-M3627
29. Battery Charger PKD-H14 Supply Breaker	PHB-M3209
30. Backup Battery Charger PKB-H16 Supply Breaker	PHB-M3425
31. Essential Spray Pond Pump SPB-P01	PBB-S04C
32. Essential Cooling Water Pump EWB-P01	PBB-S04M
33. Essential Chilled Water Chiller ECB-E01	PBB-S04G
34. Battery Room D Essential Exhaust Fan HJB-J01A	PHB-M3206
35. Battery Room B Essential Exhaust Fan HJB-J01B	PHB-M3207
36. ESF Switchgear Room B Essential AHU HJB-Z03	PHB-M3203
37. Electrical Penetration Room B ACU Fan HAB-Z06	PHB-M3631
38. SIT Vent Valves Power Supply SIB-HS-18A —— B	RSP
39. SIT 2A Vent Valve SIB-HV-613	RSP
40. SIT 2B Vent Valve SIB-HV-623	RSP
41. SIT 1A Vent Valve SIB-HV-633	RSP
42. SIT 1B Vent Valve SIB-HV-643	RSP
43. LPSI Pump B SIB-P01	PBB-S04F
44. Containment Spray Pump B Discharger to SD HX "B" Valve SIB-HV-689	PHB-M3804
45. LPSI Containment Spray from SD HX "B" X-tie Valve SIB-HV-695	PHB-M3810
46. Shutdown Cooling LPSI Suction Valve SIB-HV-656	PHB-M3605
47. Shutdown Cooling Warmup Bypass Valve SIB-UV-690	PHB-M3806
48. LPSI Containment Spray to SD HX "B" X-tie Valve SIB-HV-694	PHB-M3414

X

TABLE 3.3-9C (Continued)

REMOTE SHUTDOWN CONTROL CIRCUITS

CONTROL CIRCUITS	SWITCH LOCATION
25. E-PGB L32B2 480V Main Supply Breaker To Load Center PGB-L32	PGB-L32B1
26. E-PGB-L34B2 480V Main Supply Breaker To Load Center PGB-L34	PGB-L34B1
27. E-PGB-L36 480V Supply Breaker To Load Center PGB-L36	PGB-L36B1
28. Battery Charger PKB-H12 Supply Breaker	PHB-M3627
29. Battery Charger PKD-H14 Supply Breaker	PHB-M3209
30. Backup Battery Charger PKB-H16 Supply Breaker	PHB-M3425
31. Essential Spray Pond Pump SPB-P01	PBB-S04C
32. Essential Cooling Water Pump EWB-P01	PBB-S04M
33. Essential Chilled Water Chiller ECB-E01	PBB-S04G
34. Battery Room D Essential Exhaust Fan HJB-J01A	PHB-M3206
35. Battery Room B Essential Exhaust Fan HJB-J01B	PHB-M3207
36. ESF Switchgear Room B Essential AHU HJB-Z03	PHB-M3203
37. Electrical Penetration Room B ACU Fan HAB-Z06	PHB-M3631
38. SIT Vent Valves Power Supply SIB-HS-18A —— B	RSP X
39. SIT 2A Vent Valve SIB-HV-613	RSP
40. SIT 2B Vent Valve SIB-HV-623	RSP
41. SIT 1A Vent Valve SIB-HV-633	RSP
42. SIT 1B Vent Valve SIB-HV-643	RSP
43. LPSI Pump B SIB-P01	PBB-S04F
44. Containment Spray Pump B Discharger to SD HX "B" Valve SIB-HV-689	PHB-M3804
45. LPSI Containment Spray from SD HX "B" X-tie Valve SIB-HV-695	PHB-M3810
46. Shutdown Cooling LPSI Suction Valve SIB-UV-656	PHB-M3605
47. Shutdown Cooling Warmup Bypass Valve SIB-HV-690	PHB-M3806
48. LPSI Containment Spray to SD HX "B" X-tie Valve SIB-HV-694	PHB-M3414

TABLE 3.3-9C (Continued)

REMOTE SHUTDOWN CONTROL CIRCUITS

CONTROL CIRCUITS	SWITCH LOCATION
25. E-PGB L32B2 480V Main Supply Breaker To Load Center PGB-L32	PGB-L32B1
26. E-PGB-L34B2 480V Main Supply Breaker To Load Center PGB-L34	PGB-L34B1
27. E-PGB-L36 480V Supply Breaker To Load Center PGB-L36	PGB-L36B1
28. Battery Charger PKB-H12 Supply Breaker	PHB-M3627
29. Battery Charger PKD-H14 Supply Breaker	PHB-M3209
30. Backup Battery Charger PKB-H16 Supply Breaker	PHB-M3425
31. Essential Spray Pond Pump SPB-P01	PBB-S04C
32. Essential Cooling Water Pump EWB-P01	PBB-S04M
33. Essential Chilled Water Chiller ECB-E01	PBB-S04G
34. Battery Room D Essential Exhaust Fan HJB-J01A	PHB-M3206
35. Battery Room B Essential Exhaust Fan HJB-J01B	PHB-M3207
36. ESF Switchgear Room B Essential AHU HJB-Z03	PHB-M3203
37. Electrical Penetration Room B ACU Fan HAB-Z06	PHB-M3631
38. SIT Vent Valves Power Supply SIB-HS-18A —— B	RSP
39. SIT 2A Vent Valve SIB-HV-613	RSP
40. SIT 2B Vent Valve SIB-HV-623	RSP
41. SIT 1A Vent Valve SIB-HV-633	RSP
42. SIT 1B Vent Valve SIB-HV-643	RSP
43. LPSI Pump B SIB-P01	PBB-S04F
44. Containment Spray Pump B Discharger to SD HX "B" Valve SIB-HV-689	PHB-M3804
45. LPSI Containment Spray from SD HX "B" X-tie Valve SIB-HV-695	PHB-M3810
46. Shutdown Cooling LPSI Suction Valve SIB-UV-656	PHB-M3605
47. Shutdown Cooling Warmup Bypass Valve SIB-HV-690	PHB-M3806
48. LPSI Containment Spray to SD HX "B" X-tie Valve SIB-HV-694	PHB-M3414

X

TABLE 3.3-9C (continued)
REMOTE SHUTDOWN CONTROL CIRCUITS

CONTROL CIRCUITS	SWITCH LOCATION
27. E-PGB-L36 480V Supply Breaker to Load Center PGB-L36	PGB-L36B1
28. Battery Charger PKB-H12 Supply Breaker	PHB-M3627
29. Battery Charger PKD-H14 Supply Breaker	PHB-M3209
30. Backup Battery Charger PKB-H16 Supply Breaker	PHB-M3425
31. Essential Spray Pond Pump SPB-P01	PBB-S04C
32. Essential Cooling Water Pump EWB-P01	PBB-S04M
33. Essential Chilled Water Chiller ECB-E01	PBB-S04G
34. Battery Room D Essential Exhaust Fan HJB-J01A	PHB-M3206
35. Battery Room B Essential Exhaust Fan HJB-J01B	PHB-M3207
36. ESF Switchgear Room B Essential AHU HJB-Z03	PHB-M3203
37. Electrical Penetration Room B ACU Fan HAB-Z06	PHB-M3631
38. SIT Vent Valves Power Supply SIB-HS-18A	RSP
39. SIT 2A Vent Valve SIB-HV-613	RSP
40. SIT 2B Vent Valve SIB-HV-623	RSP
41. SIT 1A Vent Valve SIB-HV-633	RSP
42. SIT 1B Vent Valve SIB-HV-643	RSP
43. LPSI Pump B SIB-P01	PBB-S04F
44. Containment Spray Pump B Discharger to SD HX "B" Valve SIB-HV-689	PHB-M3804
45. LPSI Containment Spray from SD HX "B" X-tie Valve SIB-HV-695	PHB-M3810
46. Shutdown Cooling LPSI Suction Valve SIB-HV-656	PHB-M3605
47. Shutdown Cooling Warmup Bypass Valve SIB-UV-690	PHB-M3806
48. LPSI Containment Spray to SD HX "B" X-tie Valve SIB-HV-694	PHB-M3414

TABLE 3.3-9C (continued)
REMOTE SHUTDOWN CONTROL CIRCUITS

CONTROL CIRCUITS	SWITCH LOCATION
49. SD HX "B" to RC Loops 2A/2B Valve SIB-HV-696	PHB-M3415
50. LPSI SD HX "B" Bypass Valve SIB-HV-307	PHB-M3803
51. LPSI Pump B Recirc. Valve SIB-UV-688 668	PHB-M3609
52. LPSI Pump B Suction From RWT SIB-HV-692	PHB-M3805
53. RC Loop to Shutdown Cooling Valve SIB-UV-652	PHB-M3604
54. RC Loop to Shutdown Cooling Valve SIB-UV-654	PKD-B44
55. LPSI Header B to RC Loop 2A Valve SIB-UV-615	PHB-M3606
56. LPSI Header B to RC Loop 2B Valve SIB-UV-625	PHB-M3621
57. SDC "B" Temperature Control Valve SIB-HV-658	PHB-M3412
58. Control Room Ventilation Isolation Dampers HJB-M01/HJB-M55	RSP
59. O.S.A. Supply Damper HJB-M02	RSP
60. O.S.A. Supply Damper HJB-M03	RSP
61. Diesel Generator "B" Emergency Start	DGB-B01
62. Normal Offsite Power Supply Breaker	PBB-S04K
63. Alternate Offsite Power Supply Breaker	PBB-S04L
64. Battery "B" Breaker	PKB-M4201
65. Battery "D" Breaker	PKD-M4401
66. RCS Sample Isolation Valve SSA-UV-203	SSA-J04
67. RCS Sample Isolation Valve SSB-UV-200	SSB-J04
68. Train "B" Pumps Combined Recirc to RWT Valve SIB-UV-659	RSP
69. Shutdown Cooling Heat Exchanger Bypass Valve SIB-HV-693	PHB-M3413
70. Battery "A" Breaker	PKA-M4101

3/4.4.3 PRESSURIZER

PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.3.1 The pressurizer shall be OPERABLE with a minimum steady-state water level of greater than or equal to 27% indicated level (425 cubic feet) and a maximum steady-state water level of less than or equal to 56% indicated level (948 cubic feet) and at least two groups of pressurizer heaters capable of being powered from Class 1E buses each having a minimum capacity of 125 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, restore the pressurizer to OPERABLE status within 1 hour, or 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 limits at least once per 12 hours.

4.4.3.1.2 The capacity of the above required groups of pressurizer heaters shall be verified to be at least 125 kW at least once per 92 days.

4.4.3.1.3 The emergency power supply for the pressurizer heaters shall be demonstrated OPERABLE at least once per 18 months by verifying that on an Engineered Safety Features Actuation test signal concurrent with a loss-of-offsite power:

a. The pressurizer heaters are automatically shed from the emergency power sources, and*

b. The pressurizer heaters can be reconnected to their respective buses manually from the control room.*

*Deferred until cycle 3 refueling outage.

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.5.2 Reactor Coolant System leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE,

b. 1 gpm UNIDENTIFIED LEAKAGE,

c. 1 gpm total primary-to-secondary leakage through all steam generators, and 720 gallons per day through any one steam generator,

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

b.(*) With any Reactor Coolant System leakage greater than any one of the limits, excluding PRESSURE BOUNDARY 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.

d. With RCS leakage alarmed and confirmed in a flow path with no flow rate indicators, commence an RCS water inventory balance within 1 hour to determine the leak rate.

SURVEILLANCE REQUIREMENTS

4.4.5.2.1 Reactor Coolant System leakages shall be demonstrated to be within each of the above limits by:

a. Monitoring the containment atmosphere gaseous and particulate radioactivity monitor at least once per 12 hours.

*As a one time only extension during the power ascension program, an additional 72 hours is granted to cold shutdown. During this 72 hours if the unidentified leakage exceeds 2.0 gpm, an immediate cooldown will be initiated. The RCS leakage (Surveillance Requirement 4.4.5.2.1.c) will be calculated at least once per eight hours during this 72-hour extension.

3/4.4.10 REACTOR COOLANT SYSTEM VENTS

LIMITING CONDITION FOR OPERATION

3.4.10 Both reactor coolant system vent paths 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 only one of the above required reactor coolant system vent paths OPERABLE, from either location restore both paths at that location 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 none of the above required reactor coolant system vent paths OPERABLE, from either location restore at least one path at that location 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

4.4.10 Each Reactor Coolant System vent path shall be demonstrated OPERABLE at least once per 18 months, when in MODES 5 or 6, 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 from the control room. X

c. Verifying flow through the reactor coolant system vent paths during venting.

3/4.4.10 REACTOR COOLANT SYSTEM VENTS

LIMITING CONDITION FOR OPERATION

3.4.10 Both reactor coolant system vent paths 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 only one of the above required reactor coolant system vent paths OPERABLE, from either location restore both paths at that location 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 none of the above required reactor coolant system vent paths OPERABLE, from either location restore at least one path at that location 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

4.4.10 Each reactor coolant system vent path shall be demonstrated OPERABLE at least once per 18 months, when in MODES 5 or 6, 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 from the control room.

c. Verifying flow through the reactor coolant system vent paths during venting.

REACTOR COOLANT SYSTEM

3/4.4.10 REACTOR COOLANT SYSTEM VENTS

LIMITING CONDITION FOR OPERATION

3.4.10 Both reactor coolant system vent paths 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 only one of the above required reactor coolant system vent paths OPERABLE, from either location restore both paths at that location 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 none of the above required reactor coolant system vent paths OPERABLE, from either location restore at least one path at that location 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

4.4.10 Each reactor coolant system vent path shall be demonstrated OPERABLE at least once per 18 months, when in MODES 5 or 6, 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 from the control room.

c. Verifying flow through the reactor coolant system vent paths during venting.

4.5.1 Each safety injection tank shall be demonstrated OPERABLE:

a. At least once per 12 hours by:

1. Verifying the contained borated water volume and nitrogen cover-pressure in the tanks is within the above limits, and

2. Verifying that each safety injection tank isolation valve is open and the nitrogen vent valves are closed.

b. At least once per 31 days and whenever the tank is drained to maintain the contained borated water level within the limits of Specification 3.5.1b, by verifying the boron concentration of the safety injection tank solution is between 2300 and 4400 ppm.

c. At least once per 31 days when the pressurizer pressure is above 430 psia, by verifying that power to the isolation valve operator is removed.

d. 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 515 psia, and

2. Upon receipt of a safety injection actuation (SIAS) test signal.*

e. At least once per 18 months by verifying OPERABILITY of RCS-SIT differential pressure alarm by simulating RCS pressure > 715 psia with SIT pressure < 600 psig.

f. At least once per 18 months, when SITs are isolated, by verifying the SIT nitrogen vent valves can be opened.

g. At least once per 31 days, by verifying that power is removed from the nitrogen vent valves.

*Deferred until cycle 3 refueling outage.

FOR INFORMATION ONLY

1. A visual inspection of the containment 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.

2. Verifying that a minimum total of 464 cubic feet of solid granular trisodium phosphate dodecahydrate (TSP) is contained within the TSP storage baskets.

3. Verifying that when a representative sample of 0.055 ± 0.001 lb of TSP from a TSP storage basket is submerged, without agitation, in 1.0 ± 0.05 gallons of 77 ± 9 °F borated water from the RWT, the pH of the mixed solution is raised to greater than or equal to 7 within 4 hours.

e. At least once per 18 months, during shutdown, by:

1. Verifying that each automatic valve in the flow path actuates to its correct position on (SIAS and RAS) test signal(s).*

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 containment sump isolation valves open, the HPSI, LPSI and CS pump minimum bypass recirculation flow line isolation valves and combined SI mini-flow valve close, and the LPSI pumps stop.*

4. Conducting an inspection of all ECCS piping outside of containment, which is in contact with recirculation sump inventory during LOCA conditions, and verifying that the total measured leakage from piping and components is less than 1 gpm when pressurized to at least 40 psig.

f. By verifying that each of the following pumps develops the indicated differential pressure at or greater than their respective minimum allowable recirculation flow when tested pursuant to Specification 4.0.5:

1. High pressure safety injection pump greater than or equal to 1761 psid.

2. Low pressure safety injection pump greater than or equal to 165 psid.

*Deferred until cycle 3 refueling outage.

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 RWT on a containment spray actuation signal and automatically transferring suction to the containment sump on a recirculation actuation signal. Each spray system flow path from the containment sump shall be via an OPERABLE shutdown cooling heat exchanger.

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

ACTION:

With one containment spray system inoperable, restore the inoperable spray system to OPERABLE status within 72 hours 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.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path is positioned to take suction from the RWT on a containment spray actuation (CSAS) test signal.

b. By verifying that each pump develops an indicated differential pressure of greater than or equal to 257 psid at greater than or equal the minimum allowable recirculation flowrate when tested pursuant to Specification 4.0.5.

c. At least once per 31 days by verifying that the system piping is full of water to the 60 inch level in the containment spray header (≥115 foot level).

d. At least once per 18 months, during shutdown, by:

1. Verifying that each automatic valve in the flow path actuates to its correct position on a containment spray actuation (CSAS) and recirculation actuation (RAS) test signal.**

2. Verifying that upon a recirculation actuation test signal, the containment sump isolation valves open and that a recirculation mode flow path via an OPERABLE shutdown cooling heat exchanger is established.**

*Only when shutdown cooling is not in operation.
**Deferred until cycle 3 refueling outage.

SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying that each spray pump starts automatically on a safety injection actuation (SIA) and on a containment spray actuation (CSA) test signal.*

e. At least once per 5 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

*Deferred until cycle 3 refueling outage.

SURVEILLANCE REQUIREMENTS (Continued)

d. At least once per 18 months, during shutdown, by

1. Verifying that each automatic valve in the flow path actuates to its correct position on a containment spray actuation (CSAS) test signal,* and

2. Verifying that each spray chemical addition pump starts automatically on a CSAS test signal.*

e. At least once per 5 years by verifying each solution flow rate from the following drain connections in the iodine removal system:

1. SIA-V253 pump discharge line 0.63 ± 0.02 gpm.

2. SIB-V254 pump discharge line 0.63 ± 0.02 gpm.

*Deferred until cycle 3 refueling outage.

TABLE 3.6-1 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NUMBER	PENETRATION NUMBER	FUNCTION	MAXIMUM ACTUATION TIME (SECONDS)
		D. CHECK VALVES (Continued)	
CHE-V M70	41	Regenerative heat exchanger to RC loop 2A	N.A.
IAE-V 072 073	59	Containment service air utility station	N.A.
SIB-V 533	67	Long term recirculation loop 2	N.A.
CHE-V 835	72	RC pump seal injection water to RCP 1A, 1B, 2A, 2B	N.A.
AFE-V 079#	75	Steam generator 1 auxiliary feedwater	N.A.
AFE-V 080#	76	Steam generator 2 auxiliary feedwater	N.A.
SIA-V 523	77	Long term recirculation loop 1	N.A.

X

#Not Type C tested.

TABLE 3.6-1 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NUMBER	PENETRATION NUMBER	FUNCTION	MAXIMUM ACTUATION TIME (SECONDS)
		G. REQUIRED OPEN DURING ACCIDENT CONDITIONS	
SID-UV 654	26	From shutdown cooling RC loop 2	N.A.
SIB-UV 656	26	From shutdown cooling RC loop 2	N.A.
SIB-HV 690	26	From shutdown cooling RC loop 2	N.A.
SIC-UV 653	27	From shutdown cooling RC loop 1	N.A.
SIA-UV 655	27	From shutdown cooling RC loop 1	N.A.
SIA-HV 691	27	From shutdown cooling RC loop 1	N.A.
HCC-HV 076#	32A	Containment pressure monitor	N.A.
HPA-HV 007A	35	Containment to hydrogen monitor	N.A.
HPB-HV 008A	36	Containment to hydrogen monitor	N.A.
HPA-HV 007B	38	Hydrogen monitor to containment	N.A.
HPB-HV 008B	39	Hydrogen monitor to containment	N.A.
CHA-HV 524	41	Regenerative heat exchanger to RC loop 2A	N.A.
HCA-HV 074#	54A	Containment pressure monitor	N.A.
HCB-HV 075#	55A	Containment pressure monitor	N.A.
HCD-HV 077#	62A	CB pressure monitor	N.A.
SID-HV 331	67	Long-term recirculation loop 2	N.A.
CHB-HV 255	72	RC pump seal injection water to RCP 1A, 1B 2A, 2B	N.A.
SIC-HV 321	77	Long-term rec1rculation loop 1	N.A.
SGA-UV 134#	2	Main steam to auxiliary feedwater turbine	N.A.

#Not Type C tested.

CONTROLLED BY USER

ELECTRIC HYDROGEN RECOMBINERS

LIMITING CONDITION FOR OPERATION

3.6.4.2 Two portable independent containment hydrogen recombiner systems shared among the three units shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or meet the requirements of Specification 3.6.4.3, or be in at least HOT STANDBY within the next 6 hours.*

SURVEILLANCE REQUIREMENTS

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE:

a. At least once per 6 months by:

1. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiner enclosure and control console.

2. Operating the recombiner to include the air blast heat exchanger fan motor and enclosed blower motor continuously for at least 30 minutes at a temperature of approximately 800°F reaction chamber temperature.

b. At least once per year by performing a CHANNEL CALIBRATION of recombiner instrumentation to include a functional test of the recombiner at 1200°F (± 50°F) for at least four hours.

*Prior to March 30, 1986 or until the completion of the environmental qualification modifications to the hydrogen recombiner system, whichever occurs first, the provisions of Specification 3.0.4 are not applicable during implementation of the environmental qualification modifications to the hydrogen recombiner system when the containment hydrogen purge cleanup system described in Specification 3.6.4.3 is OPERABLE.

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 18 months during shutdown by:

1. Verifying that each automatic valve in the flow path actuates to its correct position upon receipt of an auxiliary feedwater actuation test signal.*

2. Verifying that each pump that starts automatically upon receipt of an auxiliary feedwater actuation test signal will start automatically upon receipt of an auxiliary feedwater actuation test signal.*

c. Prior to startup following any refueling shutdown or cold shutdown of 30 days or longer, by verifying on a STAGGERED TEST BASIS (by means of a flow test) that the normal flow path from the condensate storage tank to each of the steam generators through one of the essential auxiliary feedwater pumps delivers at least 750 gpm at 1270 psia or equivalent.

d. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or MODE 4 for the turbine-driven pump.

*Deferred until cycle 3 refueling outage.

FOR INFORMATION ONLY

3/4.7.3 ESSENTIAL COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3 At least two independent essential cooling water loops shall be OPERABLE.

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

ACTION:

With only one essential cooling water loop OPERABLE, restore at least 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

4.7.3 At least two essential cooling water loops 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 during shutdown, by verifying that each automatic valve servicing safety-related equipment actuates to its correct position on an SIAS test signal.*

c. At least once per 18 months during shutdown, by verifying that the essential cooling water pumps start on an SIAS test signal.*

d. At least once per 18 months during shutdown, by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is locked, sealed, or otherwise secured in position, is in its correct position.

*Deferred until cycle 3 refueling outage.

SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying that the cleanup 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 28,600 cfm ± 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*, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978*.

3. Verifying a system flow rate of 28,600 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

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*, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978*.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters, pre-filters, and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 28,600 cfm ± 10%.

2. Verifying that on a Control Room Essential Filtration Actuation Signal and on a SIAS, the system is automatically placed into a filtration mode of operation with flow through the HEPA filters and charcoal adsorber banks.**

3. Verifying that the system maintains the control room at a positive pressure of greater than or equal to 1/8-inch Water Gauge relative to adjacent areas during system operation at a makeup flow rate to the control room of less than or equal to 1000 cfm.

4. Verifying that the emergency chilled water system will maintain the control room environment at a temperature less than or equal to 80°F for a period of 30 minutes.

*ANSI N509-1980 is applicable for this specification.

**Deferred until cycle 3 refueling outage.

1. Verifying that the cleanup 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 6000 cfm ± 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,* meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.*

3. Verifying a system flow rate of 6000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

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,* meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.*

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters, pre-filters, and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 6000 cfm ± 10%.

2. Verifying that the system starts on an SIAS test signal.**

e. After each complete or partial replacement of an HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 6000 cfm ± 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 99.0% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 6000 cfm ± 10%.

*ANSI N509-1980 is applicable for this specification.
**Deferred until cycle 3 refueling outage.

PLANT SYSTEMS

3/4.7.9 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.9 All hydraulic and mechanical snubbers shall be OPERABLE. The only snubbers excluded from this requirement are those installed on nonsafety-related systems and then only if their failure or failure of the system on which they are installed, would have no adverse effect on any safety-related system.

APPLICABILITY: MODES 1, 2, 3, and 4. MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES.

ACTION:

With one or more snubbers inoperable on any system, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.9g. on the attached component or declare the attached system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.9 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

a. Snubber Types

As used in this specification, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.

b. Visual Inspections

Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these groups (inaccessible and accessible) may be inspected independently according to the schedule below. The first inservice visual inspection of each type of snubber shall be performed after 4 months but within 10 months of commencing POWER OPERATION and shall include all hydraulic and mechanical snubbers.* If all snubbers of each type are found OPERABLE during the first inservice visual inspection, the second inservice visual inspection of that type shall be performed at the first refueling outage. Otherwise, subsequent visual inspections of a given type shall be performed in accordance with the following schedule:

*With the exception that the first inservice visual inspection for all snubbers that are inaccessible during reactor operation shall be conducted no later than the first refueling outage.

3/4.7.11 SHUTDOWN COOLING SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.11 Two independent shutdown cooling subsystems shall be OPERABLE, with each subsystem comprised of:

a. One OPERABLE low pressure safety injection pump, and

b. An independent OPERABLE flow path capable of taking suction from the RCS hot leg and discharging coolant through the shutdown cooling heat exchanger and back to the RCS through the cold leg injection lines.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With one shutdown cooling subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 72 hours or be in at least HOT STANDBY within 1 hour, be in at least HOT SHUTDOWN within the next 6 hours and be in COLD SHUTDOWN within the next 30 hours and continue action to restore the required subsystem to OPERABLE status.

b. With both shutdown cooling subsystems inoperable, restore one subsystem to OPERABLE status within 1 hour or be in at least HOT STANDBY within 1 hour and be in HOT SHUTDOWN within the next 6 hours and continue action to restore the required subsystems to OPERABLE status.

c. With both sutdown cooling subsystems inoperable and both reactor coolant loops inoperable, initiate action to restore the required subsystems to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.7.11 Each shutdown cooling subsystem shall be demonstrated OPERABLE:

a. At least once per 18 months, during shutdown, by establishing shutdown cooling flow from the RCS hot legs, through the shutdown cooling heat exchangers, and returning to the RCS cold legs.

b. At least once per 18 months, during shutdown, by testing the automatic and interlock action of the shutdown cooling system connections from the RCS. The shutdown cooling system suction valves shall not open when RCS pressure is greater than 410 psia. The shutdown cooling system suction valves located outside containment shall close automatically when RCS pressure is greater than 500 psia. The shutdown cooling system suction valve located inside containment shall close automatically when RCS pressure is greater than 700 psia.

PLANT SYSTEMS

3/4.7.11 SHUTDOWN COOLING SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.11 Two independent shutdown cooling subsystems shall be OPERABLE, with each subsystem comprised of:

a. One OPERABLE low pressure safety injection pump, and

b. An independent OPERABLE flow path capable of taking suction from the RCS hot leg and discharging coolant through the shutdown cooling heat exchanger and back to the RCS through the cold leg injection lines.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With one shutdown cooling subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 72 hours or be in at least HOT STANDBY within 1 hour, be in at least HOT SHUTDOWN within the next 6 hours and be in COLD SHUTDOWN within the next 30 hours and continue action to restore the required subsystem to OPERABLE status.

b. With both shutdown cooling subsystems inoperable, restore one subsystem to OPERABLE status within 1 hour or be in at least HOT STANDBY within 1 hour and be in HOT SHUTDOWN within the next 6 hours and continue action to restore the required subsystems to OPERABLE status.

c. With both sutdown cooling subsystems inoperable and both reactor coolant loops inoperable, initiate action to restore the required subsystems to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.7.11 Each shutdown cooling subsystem shall be demonstrated OPERABLE:

a. At least once per 18 months, during shutdown, by establishing shutdown cooling flow from the RCS hot legs, through the shutdown cooling heat exchangers, and returning to the RCS cold legs.

b. At least once per 18 months, during shutdown, by testing the automatic and interlock action of the shutdown cooling system connections from the RCS. The shutdown cooling system suction valves shall not open when RCS pressure is greater than 410 psia. The shutdown cooling system suction valves located outside containment shall close automatically when RCS pressure is greater than 500 psia. The shutdown cooling system suction valve located inside containment shall close automatically when RCS pressure is greater than 700 psia.

3/4.7.11 SHUTDOWN COOLING SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.11 Two independent shutdown cooling subsystems shall be OPERABLE, with each subsystem comprised of:

a. One OPERABLE low pressure safety injection pump, and

b. An independent OPERABLE flow path capable of taking suction from the RCS hot leg and discharging coolant through the shutdown cooling heat exchanger and back to the RCS through the cold leg injection lines.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With one shutdown cooling subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 72 hours or be in at least HOT STANDBY within 1 hour, be in at least HOT SHUTDOWN within the next 6 hours and be in COLD SHUTDOWN within the next 30 hours and continue action to restore the required subsystem to OPERABLE status.

b. With both shutdown cooling subsystems inoperable, restore one subsystem to OPERABLE status within 1 hour or be in at least HOT STANDBY within 1 hour and be in HOT SHUTDOWN within the next 6 hours and continue action to restore the required subsystems to OPERABLE status.

c. With both sutdown cooling subsystems inoperable and both reactor coolant loops inoperable, initiate action to restore the required subsystems to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.7.11 Each shutdown cooling subsystem shall be demonstrated OPERABLE:

a. At least once per 18 months, during shutdown, by establishing shutdown cooling flow from the RCS hot legs, through the shutdown cooling heat exchangers, and returning to the RCS cold legs.

b. At least once per 18 months, during shutdown, by testing the automatic and interlock action of the shutdown cooling system connections from the RCS. The shutdown cooling system suction valves shall not open when RCS pressure is greater than 410 psia. The shutdown cooling system suction valves located outside containment shall close automatically when RCS pressure is greater than 500 psia. The shutdown cooling system suction valve located inside containment shall close automatically when RCS pressure is greater than 700 psia.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required physically 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 alignment indicating power availability

b. Demonstrated OPERABLE at least once per 18 months during shutdown by manually transferring the onsite Class 1E power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:

1. Verifying the fuel level in the day tank.
2. Verifying the fuel level in the fuel storage tank.
3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.
4. Verifying the diesel generator can start** and accelerate to generator voltage and frequency at 4160 ± 420 volts and 60 ± 1.2 Hz in less than or equal to 10 seconds. Subsequently, the generator shall be manually synchronized to its appropriate bus and gradually loaded** to an indicated 5200-5400 kW*** and operates for at least 60 minutes. The diesel generator shall be started for this test**** using one of the following signals on a STAGGERED TEST BASIS:

   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.

5. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

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

***This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

****Until the first refueling outage, the diesel generator shall be test started only manually.

4.8.1.1.1 Each of the above required physically 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 alignment indicating power availability

b. Demonstrated OPERABLE at least once per 18 months during shutdown by manually transferring the onsite Class 1E power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:

1. Verifying the fuel level in the day tank.
2. Verifying the fuel level in the fuel storage tank.
3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.
4. Verifying the diesel generator can start** and accelerate to generator voltage and frequency at 4160 ± 420 volts and 60 ± 1.2 Hz in less than or equal to 10 seconds. Subsequently, the generator shall be manually synchronized to its appropriate bus and gradually loaded** to an indicated 5200-5400 kW*** and operates for at least 60 minutes. The diesel generator shall be started for this test**** using one of the following signals on a STAGGERED TEST BASIS:

   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.

5. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

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

***This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

****Until the first refueling outage, the diesel generator shall be test started only manually.

4.8.1.1.1 Each of the above required physically 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 alignment indicating power availability

b. Demonstrated OPERABLE at least once per 18 months during shutdown by manually transferring the onsite Class 1E power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:

1. Verifying the fuel level in the day tank.

2. Verifying the fuel level in the fuel storage tank.

3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.

4. Verifying the diesel generator can start** and accelerate to generator voltage and frequency at 4160 ± 420 volts and 60 ± 1.2 Hz in less than or equal to 10 seconds. Subsequently, the generator shall be manually synchronized to its appropriate bus and gradually loaded** to an indicated 5200-5400 kW*** and operates for at least 60 minutes. The diesel generator shall be started for this test**** using one of the following signals on a STAGGERED TEST BASIS:

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.

5. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

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

***This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

****Until the first refueling outage, the diesel generator shall be test started only manually.

FOR INFORMATION ONLY

4.8.1.1.2 (Continued)

b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank obtained in accordance with ASTM-D4176-82, is within the acceptable limits specified in Table 1 of ASTM D975-81 when checked for viscosity, water and sediment.

c. At least once per 184 days the diesel generator shall be started** and accelerated to generator voltage and frequency at 4160 ± 420 volts and 60 ± 1.2 Hz in less than or equal to 10 seconds. The generator voltage and frequency shall be 4160 ± 420 volts and 60 ± 1.2 Hz within 10 seconds after the start signal. The generator shall be manually synchronized to its appropriate emergency bus, loaded to an indicated 5200-5400*** kW in less than or equal to 60 seconds, and operate for at least 60 minutes.

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

d. At least once per 18 months during shutdown by:

   1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.

   2. Verifying the generator capability to reject a single largest load of greater than or equal to 839 kW (Train B AFW pump) for emergency diesel generator B or 696 kW for emergency diesel generator A (Train A HPSI pump) while maintaining voltage at 4160 ± 420 volts and frequency at 60 ± 1.2 Hz.****

   3. Verifying that the automatic load sequencers are OPERABLE with the interval between each load block within ± 1 second of its design interval.****

   4. 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 with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is

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

***This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

****Deferred until cycle 3 refueling outage.

4.8.1.1.2 (Continued)

loaded with the shutdown loads. After energization of these loads, the steady state voltage and frequency shall be maintained at 4160 ± 420 volts and 60 + 1.2/-0.3 Hz.

5. Verifying that on an ESF actuation test signal (without loss of power) the diesel generator starts* on the auto-start signal and operates on standby for greater than or equal to 5 minutes.

6. Simulating a loss-of-offsite power in conjunction with an ESF actuation test signal, and

   a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.

   b) Verifying the diesel starts* on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer, and operates for greater than or equal to 5 minutes and maintains the steady-state voltage and frequency at 4160 ± 420 volts and 60 + 1.2/-0.3 Hz.

   c) Verifying that all automatic diesel generator trips, except engine overspeed, generator differential, and low lube oil pressure, are automatically bypassed upon loss of voltage on the emergency bus, upon a safety injection actuation signal or upon AFAS.

7. Verifying the diesel generator operates* for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to an indicated 5800-6000 kW** and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 5200-5400 kW**. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.d.6.b).***

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

**This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test. 8

***If Specification 4.4.1.1.2.d.6.b) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at 5200-5400 kW** for 1 hour or until operating temperature has stabilized.

4.8.1.1.2 (Continued)

loaded with the shutdown loads. After energization of these loads, the steady state voltage and frequency shall be maintained at 4160 ± 420 volts and 60 + 1.2/-0.3 Hz.****

5. Verifying that on an ESF actuation test signal (without loss of power) the diesel generator starts* on the auto-start signal and operates on standby for greater than or equal to 5 minutes.****

6. Simulating a loss-of-offsite power in conjunction with an ESF actuation test signal, and

   a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.****

   b) Verifying the diesel starts* on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer, and operates for greater than or equal to 5 minutes and maintains the steady-state voltage and frequency at 4160 ± 420 volts and 60 + 1.2/-0.3 Hz.****

   c) Verifying that all automatic diesel generator trips, except engine overspeed, generator differential, and low lube oil pressure, are automatically bypassed upon loss of voltage on the emergency bus, upon a safety injection actuation signal or upon AFAS.****

7. Verifying the diesel generator operates* for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to an indicated 5800-6000 kW** and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 5200-5400 kW**. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.d.6.b).*** ****

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

**This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

***If Specification 4.4.1.1.2.d.6.b) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at 5200-5400 kW** for 1 hour or until operating temperature has stabilized.

****Deferred until cycle 3 refueling outage.

8. Verifying that the auto-connected loads to each diesel generator do not exceed the continuous rating of 5500 kW.****

9. 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) Proceed through its shutdown sequence.****

10. Verifying that the following diesel generator lockout features prevent diesel generator starting only when required:

    a) turning gear engaged****
    b) emergency stop****

e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting** both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to generator voltage and frequency at 4160 ± 420 volts and 60 ± 1.2 Hz in less than or equal to 10 seconds.

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

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

****Deferred until cycle 3 refueling outage.

b. At least once per 92 days and within 7 days after a battery discharge with battery terminal voltage below 105 volts, or battery overcharge with battery terminal voltage above 145 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 x 10-6 ohms, and

   3. The average electrolyte temperature of six connected cells is above 60°F.

c. At least once per 18 months by verifying that:

   1. The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration,

   2. The cell-to-cell and terminal connections are clean, tight, and coated with anticorrosion material,

   3. The resistance of each cell-to-cell and terminal connection is less than or equal to 150 x 10-6 ohms, and

   4. The battery charger will supply at least 400 amperes for batteries A and B and 300 amperes for batteries C and D at 125 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.

*Deferred until cycle 3 refueling outage.

ELECTRICAL POWER SYSTEMS

MOTOR-OPERATED VALVES THERMAL OVERLOAD PROTECTION AND BYPASS DEVICES

LIMITING CONDITION FOR OPERATION

3.8.4.2 The thermal overload protection of each valve shown in Table 3.8-3 shall be bypassed continuously or under accident conditions, as applicable, by an OPERABLE device integral with the motor starter.

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

ACTION:

With the thermal overload protection for one or more of the above required valves not bypassed continuously or under accident conditions, as applicable, by an OPERABLE integral bypass device, take administrative action to continuously bypass the thermal overload within 8 hours or declare the affected valve(s) inoperable and apply the appropriate ACTION Statement(s) for the affected valve(s).

SURVEILLANCE REQUIREMENTS

4.8.4.2.1 The thermal overload protection for the above required valves shall be verified to be bypassed continuously or under accident conditions, as applicable, by an OPERABLE integral bypass device by the performance of a CHANNEL FUNCTIONAL TEST of the bypass circuitry for those thermal overloads which are normally in force during plant operation and bypassed under accident conditions and by verifying that the thermal overload protection is bypassed for those thermal overloads which are continuously bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing:

a. At least once per 18 months, and*

b. Following maintenance on the motor starter.

4.8.4.2.2 The thermal overload protection for the above required valves which are continuously bypassed shall be verified to be bypassed following testing during which the thermal overload protection was temporarily placed in force.

*Deferred until cycle 3 refueling outage.

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 following reactivity conditions is met:

a. Either a K_{eff} of 0.95 or less, or

b. A boron concentration of greater than or equal to 2150 ppm.

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 and continue boration at greater than or equal to 26 gpm of a solution containing $\geq$ 4000 ppm boron or its equivalent until K_{eff} is reduced to less than or equal to 0.95 or the boron concentration is restored to greater than or equal to 2150 ppm, whichever is the more restrictive.

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 full-length 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.

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*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.

3/4.9.6 REFUELING MACHINE

LIMITING CONDITION FOR OPERATION

3.9.6 The refueling machine shall be used for movement of fuel assemblies and shall be OPERABLE with:

a. A minimum capacity of 3590 pounds and an overload cut off limit of less than or equal to 1556 (1727)* pounds for the refueling machine.

APPLICABILITY: During movement of fuel assemblies within the refueling cavity.

ACTION:

With the above requirements for the refueling machine not satisfied, suspend use of the refueling machine from operations involving the movement of fuel assemblies.

SURVEILLANCE REQUIREMENTS

4.9.6.1 The refueling machine used for movement of fuel assemblies shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by performing a load test of at least 3590 pounds and demonstrating an automatic load cut off when the refueling machine load exceeds 1556 (1727)* pounds.

*For initial fuel load only.

3/4.9.6 REFUELING MACHINE

LIMITING CONDITION FOR OPERATION

3.9.6 The refueling machine shall be used for movement of fuel assemblies and shall be OPERABLE with:

a. A minimum capacity of 3590 pounds and an overload cut off limit of less than or equal to 1556 (1727)* pounds for the refueling machine.

APPLICABILITY: During movement of fuel assemblies within the refueling cavity.

ACTION:

With the above requirements for the refueling machine not satisfied, suspend use of the refueling machine from operations involving the movement of fuel assemblies.

SURVEILLANCE REQUIREMENTS

4.9.6.1 The refueling machine used for movement of fuel assemblies shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by performing a load test of at least 3590 pounds and demonstrating an automatic load cut off when the refueling machine load exceeds 1556 (1727)* pounds.

*For initial fuel load only.

REFUELING OPERATIONS

3/4.9.6 REFUELING MACHINE

LIMITING CONDITION FOR OPERATION

3.9.6 The refueling machine shall be used for movement of fuel assemblies and shall be OPERABLE with:

a. A minimum capacity of 3590 pounds and an overload cut off limit of less than or equal to 1556 (1727)* pounds for the refueling machine.

APPLICABILITY: During movement of fuel assemblies within the refueling cavity.

ACTION:

With the above requirements for the refueling machine not satisfied, suspend use of the refueling machine from operations involving the movement of fuel assemblies.

SURVEILLANCE REQUIREMENTS

4.9.6.1 The refueling machine used for movement of fuel assemblies shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by performing a load test of at least 3590 pounds and demonstrating an automatic load cut off when the refueling machine load exceeds 1556 (1727)* pounds.

*For initial fuel load only.

3/4.10 SPECIAL TEST EXCEPTIONS

3/4.10.1 SHUTDOWN MARGIN AND K_{N-1} - CEA WORTH TESTS

LIMITING CONDITION FOR OPERATION

3.10.1 The SHUTDOWN MARGIN and K_{N-1} requirements of Specification 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), or the reactor is subcritical by at least the reactivity equivalent of the highest CEA worth.

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

ACTION:

a. With any full-length CEA not fully inserted and with less than the above reactivity equivalent available for trip insertion, immediately initiate and continue boration at greater than or equal to 26 gpm of a solution containing greater than or equal to 4000 ppm boron or its equivalent until the SHUTDOWN MARGIN and K_{N-1} required by Specification 3.1.1.2 are restored.

b. With all full-length CEAs fully inserted and the reactor subcritical by less than the above reactivity equivalent, immediately initiate and continue boration at greater than or equal to 26 gpm of a solution containing greater than or equal to 4000 ppm boron or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

SURVEILLANCE REQUIREMENTS

4.10.1.1 The position of each full-length and part-length CEA required either partially or fully withdrawn shall be determined at least once per 2 hours.

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 24 hours prior to reducing the SHUTDOWN MARGIN to less than the limits of Specification 3.1.1.1. 2

4.10.1.3 When in MODE 3 or MODE 4, the reactor shall be determined to be subcritical by at least the reactivity equivalent of the highest estimated CEA worth or the reactivity equivalent of the highest estimated CEA worth is available for trip insertion from OPERABLE CEAs at least once per 2 hours by consideration of at least the following factors:

a. Reactor Coolant System boron concentration,

b. CEA position,

c. Reactor Coolant System average temperature,

d. Fuel burnup based on gross thermal energy generation,

e. Xenon concentration, and

f. Samarium concentration.

*Operation in MODE 3 and MODE 4 shall be limited to 6 consecutive hours.

#Limited to low power PHYSICS TESTING at the 320°F plateau.

3/4.10 SPECIAL TEST EXCEPTIONS

3/4.10.1 SHUTDOWN MARGIN AND K_{N-1} - CEA WORTH TESTS

LIMITING CONDITION FOR OPERATION

3.10.1 The SHUTDOWN MARGIN and K_{N-1} requirements of Specification 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), or the reactor is subcritical by at least the reactivity equivalent of the highest CEA worth.

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

ACTION:

a. With any full-length CEA not fully inserted and with less than the above reactivity equivalent available for trip insertion, immediately initiate and continue boration at greater than or equal to 26 gpm of a solution containing greater than or equal to 4000 ppm boron or its equivalent until the SHUTDOWN MARGIN and K_{N-1} required by Specification 3.1.1.2 are restored.

b. With all full-length CEAs fully inserted and the reactor subcritical by less than the above reactivity equivalent, immediately initiate and continue boration at greater than or equal to 26 gpm of a solution containing greater than or equal to 4000 ppm boron or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

SURVEILLANCE REQUIREMENTS

4.10.1.1 The position of each full-length and part-length CEA required either partially or fully withdrawn shall be determined at least once per 2 hours.

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 24 hours prior to reducing the SHUTDOWN MARGIN to less than the limits of Specification 3.1.1.1 2

4.10.1.3 When in MODE 3 or MODE 4, the reactor shall be determined to be subcritical by at least the reactivity equivalent of the highest estimated CEA worth or the reactivity equivalent of the highest estimated CEA worth is available for trip insertion from OPERABLE CEAs at least once per 2 hours by consideration of at least the following factors:

a. Reactor Coolant System boron concentration,

b. CEA position,

c. Reactor Coolant System average temperature,

d. Fuel burnup based on gross thermal energy generation,

e. Xenon concentration, and

f. Samarium concentration.

*Operation in MODE 3 and MODE 4 shall be limited to 6 consecutive hours.

#Limited to low power PHYSICS TESTING at the 320°F plateau.

3/4.10 SPECIAL TEST EXCEPTIONS

3/4.10.1 SHUTDOWN MARGIN AND K_{N-1} - CEA WORTH TESTS

LIMITING CONDITION FOR OPERATION

3.10.1 The SHUTDOWN MARGIN and K_{N-1} requirements of Specification 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), or the reactor is subcritical by at least the reactivity equivalent of the highest CEA worth.

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

ACTION:

a. With any full-length CEA not fully inserted and with less than the above reactivity equivalent available for trip insertion, immediately initiate and continue boration at greater than or equal to 26 gpm of a solution containing greater than or equal to 4000 ppm boron or its equivalent until the SHUTDOWN MARGIN and K_{N-1} required by Specification 3.1.1.2 are restored.

b. With all full-length CEAs fully inserted and the reactor subcritical by less than the above reactivity equivalent, immediately initiate and continue boration at greater than or equal to 26 gpm of a solution containing greater than or equal to 4000 ppm boron or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

SURVEILLANCE REQUIREMENTS

4.10.1.1 The position of each full-length and part-length CEA required either partially or fully withdrawn shall be determined at least once per 2 hours.

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 24 hours prior to reducing the SHUTDOWN MARGIN to less than the limits of Specification 3.1.1.1 2

4.10.1.3 When in MODE 3 or MODE 4, the reactor shall be determined to be subcritical by at least the reactivity equivalent of the highest estimated CEA worth or the reactivity equivalent of the highest estimated CEA worth is available for trip insertion from OPERABLE CEAs at least once per 2 hours by consideration of at least the following factors:

a. Reactor Coolant System boron concentration,

b. CEA position,

c. Reactor Coolant System average temperature,

d. Fuel burnup based on gross thermal energy generation,

e. Xenon concentration, and

f. Samarium concentration.

*Operation in MODE 3 and MODE 4 shall be limited to 6 consecutive hours.

#Limited to low power PHYSICS TESTING at the 320°F plateau.

3/4.10.5 MINIMUM TEMPERATURE AND PRESSURE FOR CRITICALITY

3.10.5 The minimum temperature and pressure for criticality limits of Specifications 3.1.1.4 and 3.2.8 may be suspended during low temperature PHYSICS TESTS to a minimum temperature of 300°F and a minimum pressure of 500 psia provided:

a. The THERMAL POWER does not exceed 5% of RATED THERMAL POWER.

b. The reactor trip setpoints on the OPERABLE Variable Overpower trip channels are set at ≤ 20% of RATED THERMAL POWER, and

c. The Reactor Coolant System temperature and pressure relationship is maintained within the acceptable region of operation required by Specification 3.4.8 except that the core critical line shown on Figure 3.4-2 does not apply.

APPLICABILITY: ~~MODE 2*.~~

This specification intentionally deleted.

ACTION:

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

b. With the Reactor Coolant System temperature and pressure relationship within the region of unacceptable operation on Figure 3.4-2, immediately open the reactor trip breakers and restore the temperature-pressure relationship to within its limit within 30 minutes; perform the engineering evaluation required by Specification 3.4.8.1 prior to the next reactor criticality.

SURVEILLANCE REQUIREMENTS

4.10.5.1 The Reactor Coolant System temperature and pressure relationship shall be verified to be within the acceptable region for operation of Figure 3.4-2 at least once per hour.

4.10.5.2 The THERMAL POWER shall be determined to be ≤ 5% of RATED THERMAL POWER at least once per hour.

4.10.5.3 The Reactor Coolant System temperature shall be verified to be greater than or equal to 300°F at least once per hour.

4.10.5.4 Each Logarithmic Power Level and Variable Overpower channel shall be subjected to a CHANNEL FUNCTIONAL TEST within 12 hours prior to initiating low temperature PHYSICS TESTS.

~~*First core only, prior to first exceeding 5% RATED THERMAL POWER.~~

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SPECIAL TEST EXCEPTIONS

3/4.10.5 MINIMUM TEMPERATURE AND PRESSURE FOR CRITICALITY

3.10.5 The minimum temperature and pressure for criticality limits of Specifications 3.1.1.4 and 3.2.8 may be suspended during low temperature PHYSICS TESTS to a minimum temperature of 300°F and a minimum pressure of 500 psia provided:

a. The THERMAL POWER does not exceed 5% of RATED THERMAL POWER.

b. The reactor trip setpoints on the OPERABLE Variable Overpower trip channels are set at ≤ 20% of RATED THERMAL POWER, and

c. The Reactor Coolant System temperature and pressure relationship is maintained within the acceptable region of operation required by Specification 3.4.8 except that the core critical line shown on Figure 3.4-2 does not apply.

APPLICABILITY: MODE 2*.

ACTION: This specification intentionally deleted.

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

b. With the Reactor Coolant System temperature and pressure relationship within the region of unacceptable operation on Figure 3.4-2, immediately open the reactor trip breakers and restore the temperature-pressure relationship to within its limit within 30 minutes; perform the engineering evaluation required by Specification 3.4.8.1 prior to the next reactor criticality.

SURVEILLANCE REQUIREMENTS

4.10.5.1 The Reactor Coolant System temperature and pressure relationship shall be verified to be within the acceptable region for operation of Figure 3.4-2 at least once per hour.

4.10.5.2 The THERMAL POWER shall be determined to be ≤ 5% of RATED THERMAL POWER at least once per hour.

4.10.5.3 The Reactor Coolant System temperature shall be verified to be greater than or equal to 300°F at least once per hour.

4.10.5.4 Each Logarithmic Power Level and Variable Overpower channel shall be subjected to a CHANNEL FUNCTIONAL TEST within 12 hours prior to initiating low temperature PHYSICS TESTS.

*First core only, prior to first exceeding 5% RATED THERMAL POWER.

SPECIAL TEST EXCEPTIONS

3/4.10.5 MINIMUM TEMPERATURE AND PRESSURE FOR CRITICALITY

[illegible]

3.10.5 The minimum temperature and pressure for criticality limits of Specifications 3.1.1.4 and 3.2.8 may be suspended during low temperature PHYSICS TESTS to a minimum temperature of 300°F and a minimum pressure of 500 psia provided:

a. The THERMAL POWER does not exceed 5% of RATED THERMAL POWER.

b. The reactor trip setpoints on the OPERABLE Variable Overpower trip channels are set at ≤ 20% of RATED THERMAL POWER, and

c. The Reactor Coolant System temperature and pressure relationship is maintained within the acceptable region of operation required by Specification 3.4.8 except that the core critical line shown on Figure 3.4-2 does not apply.

APPLICABILITY: MODE 2*.

ACTION: This specification intentionally deleted.

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

b. With the Reactor Coolant System temperature and pressure relationship within the region of unacceptable operation on Figure 3.4-2, immediately open the reactor trip breakers and restore the temperature-pressure relationship to within its limit within 30 minutes; perform the engineering evaluation required by Specification 3.4.8.1 prior to the next reactor criticality.

SURVEILLANCE REQUIREMENTS

4.10.5.1 The Reactor Coolant System temperature and pressure relationship shall be verified to be within the acceptable region for operation of Figure 3.4-2 at least once per hour.

4.10.5.2 The THERMAL POWER shall be determined to be ≤ 5% of RATED THERMAL POWER at least once per hour.

4.10.5.3 The Reactor Coolant System temperature shall be verified to be greater than or equal to 300°F at least once per hour.

4.10.5.4 Each Logarithmic Power Level and Variable Overpower channel shall be subjected to a CHANNEL FUNCTIONAL TEST within 12 hours prior to initiating low temperature PHYSICS TESTS.

*First core only, prior to first exceeding 5% RATED THERMAL POWER.

SPECIAL TEST EXCEPTIONS

3/4.10.10 NATURAL CIRCULATION TESTING PROGRAM

LIMITING CONDITION FOR OPERATION

3.10.10 The limitations of Specifications 3.4.1.2, 3.4.1.3, and 3.7.1.6 may be suspended during the performance of the Startup Natural Circulation Testing Program* provided:

a. Operations involving a reduction in boron concentration of the Reactor Coolant System are suspended.

b. Core outlet temperature is maintained at least 10°F below Saturation temperature.

c. A reactor coolant pump shall not be started with one or more of Reactor Coolant System cold leg temperatures less than or equal to 255°F during cooldown, or 295°F during heatup, unless the secondary water temperature (saturation temperature corresponding to steam generator pressure) of each steam generator is less than 100°F above each of the Reactor Coolant System cold leg temperatures.

APPLICABILITY: MODES 3 and 4 during Natural Circulation Testing.

ACTION:

With the Reactor Coolant System saturation margin less than 10°F, place at least one reactor coolant loop in operation, with at least one reactor coolant pump.

SURVEILLANCE REQUIREMENTS

4.10.10.1 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.

*Startup Natural Circulation Testing Program:

Natural Circulation Cooldown Test at 80% power.

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 SECONDARY SYSTEM LIQUID WASTE DISCHARGES TO ONSITE EVAPORATION PONDS

CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.11.1.1 The concentration of radioactive material discharged from secondary system liquid waste to the onsite evaporation ponds shall be limited to the lower limit of detectability (LLD) defined as 5 x 10^{-7} μCi/ml for the principal gamma emitters or 1 x 10^{-6} μCi/ml for I-131.*

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

ACTION:

When any secondary system liquid waste discharge pathway concentration determined in accordance with the surveillance requirements given below exceeds the specified LLD, divert that discharge pathway to the liquid radwaste system without delay or process the liquid wastes to meet the specified limits prior to release to the onsite evaporation ponds.

SURVEILLANCE REQUIREMENTS

4.11.1.1.1 Radioactive liquid wastes collected in the chemical waste neutralizer tank shall be sampled and analyzed prior to their batchwise discharge to the onsite evaporation pond in accordance with the sampling and analysis program specified in Table 4.11-1.

4.11.1.1.2 With the concentration of radioactive material in the chemical waste neutralizer tank exceeding the specified LLD, sample and analyze other secondary system discharge pathways in accordance with the sampling and analysis program specified in Table 4.11-1.

* For one time only, effective March 24, 1987, releases of principal gamma emitters with half lives less than 75 days may be allowed to exceed 5 x 10^{-7} μCi/ml but shall be limited to 10 CFR 20, Appendix B, Table II, Col. 2 concentrations for a period not to exceed 60 days. Furthermore, effective June 3, 1987, releases of Antimony-124 (Sb-124) may be allowed to exceed 5 x 10^{-7} μCi/ml, but shall be limited to 10 CFR 20, Appendix B, Table II, Column 2, concentrations until 2400 MST on March 31, 1988.

BASES

3/4.10.1 SHUTDOWN MARGIN

This special test exception provides that a minimum amount of CEA worth is immediately available for reactivity control when tests are performed for CEAs worth measurement. This special test exception is required to permit the periodic verification of the actual versus predicted core reactivity condition occurring as a result of fuel burnup or fuel cycling operations. Although testing will be initiated from MODE 2, temporary entry into MODE 3 is necessary during some CEA worth measurements. A reasonable recovery time is available for return to MODE 2 in order to continue PHYSICS TESTING.

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

This special test exception permits individual CEAs to be positioned outside of their normal group heights and insertion limits during the performance of such PHYSICS TESTS as those required to (1) measure CEA worth, (2) determine the reactor stability index and damping factor under xenon oscillation conditions, (3) determine power distributions for non-normal CEA configurations, (4) measure rod shadowing factors, and (5) measure temperature and power coefficients. Special test exception permits MTC to exceed limits in Specification 3.1.1.3 during performance of PHYSICS TESTS.

3/4.10.3 REACTOR COOLANT LOOPS

This special test exception permits reactor criticality with less than four reactor coolant pumps in operation and is required to perform certain STARTUP and PHYSICS TESTS while at low THERMAL POWER levels.

3/4.10.4 CEA POSITION, REGULATING CEA INSERTION LIMITS AND REACTOR COOLANT COLD LEG TEMPERATURE

This special test exception permits the CEAs to be positioned beyond the insertion limits and reactor coolant cold leg temperature to be outside limits during PHYSICS TESTS required to determine the isothermal temperature coefficient and power coefficient.

3/4.10.5 MINIMUM TEMPERATURE AND PRESSURE FOR CRITICALITY

This special test exception intentionally deleted. POWER levels with T_{cold} below the minimum critical temperature and pressure during PHYSICS TESTS which are required to verify the low temperature physics predictions and to ensure the adequacy of design codes for reduced temperature conditions. The Low Power Physics Testing Program at low temperature (300°F) and a pressure of 500 psia is used to perform the following tests:

1. Biological shielding survey test
2. Isothermal temperature coefficient tests
3. CEA group tests
4. Boron worth tests
5. Critical configuration boron concentration

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3/4.10 SPECIAL TEST EXCEPTIONS

BASES

3/4.10.1 SHUTDOWN MARGIN

This special test exception provides that a minimum amount of CEA worth is immediately available for reactivity control when tests are performed for CEAs worth measurement. This special test exception is required to permit the periodic verification of the actual versus predicted core reactivity condition occurring as a result of fuel burnup or fuel cycling operations. Although testing will be initiated from MODE 2, temporary entry into MODE 3 is necessary during some CEA worth measurements. A reasonable recovery time is available for return to MODE 2 in order to continue PHYSICS TESTING.

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

This special test exception permits individual CEAs to be positioned outside of their normal group heights and insertion limits during the performance of such PHYSICS TESTS as those required to (1) measure CEA worth, (2) determine the reactor stability index and damping factor under xenon oscillation conditions, (3) determine power distributions for non-normal CEA configurations, (4) measure rod shadowing factors, and (5) measure temperature and power coefficients. Special test exception permits MTC to exceed limits in Specification 3.1.1.3 during performance of PHYSICS TESTS.

3/4.10.3 REACTOR COOLANT LOOPS

This special test exception permits reactor criticality with less than four reactor coolant pumps in operation and is required to perform certain STARTUP and PHYSICS TESTS while at low THERMAL POWER levels.

3/4.10.4 CEA POSITION, REGULATING CEA INSERTION LIMITS AND REACTOR COOLANT COLD LEG TEMPERATURE

This special test exception permits the CEAs to be positioned beyond the insertion limits and reactor coolant cold leg temperature to be outside limits during PHYSICS TESTS required to determine the isothermal temperature coefficient and power coefficient.

3/4.10.5 MINIMUM TEMPERATURE AND PRESSURE FOR CRITICALITY

This special test exception intentionally deleted. POWER levels with T_{cold} below the minimum critical temperature and pressure during PHYSICS TESTS which are required to verify the low temperature physics predictions and to ensure the adequacy of design codes for reduced temperature conditions. The Low Power Physics Testing Program at low temperature (300°F) and a pressure of 500 psia is used to perform the following tests:

1. Biological shielding survey test
2. Isothermal temperature coefficient tests
3. CEA group tests
4. Boron worth tests
5. Critical configuration boron concentration

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3/4.10 SPECIAL TEST EXCEPTIONS

BASES

3/4.10.1 SHUTDOWN MARGIN

This special test exception provides that a minimum amount of CEA worth is immediately available for reactivity control when tests are performed for CEAs worth measurement. This special test exception is required to permit the periodic verification of the actual versus predicted core reactivity condition occurring as a result of fuel burnup or fuel cycling operations. Although testing will be initiated from MODE 2, temporary entry into MODE 3 is necessary during some CEA worth measurements. A reasonable recovery time is available for return to MODE 2 in order to continue PHYSICS TESTING.

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

This special test exception permits individual CEAs to be positioned outside of their normal group heights and insertion limits during the performance of such PHYSICS TESTS as those required to (1) measure CEA worth, (2) determine the reactor stability index and damping factor under xenon oscillation conditions, (3) determine power distributions for non-normal CEA configurations, (4) measure rod shadowing factors, and (5) measure temperature and power coefficients. Special test exception permits MTC to exceed limits in Specification 3.1.1.3 during performance of PHYSICS TESTS.

3/4.10.3 REACTOR COOLANT LOOPS

This special test exception permits reactor criticality with less than four reactor coolant pumps in operation and is required to perform certain STARTUP and PHYSICS TESTS while at low THERMAL POWER levels.

3/4.10.4 CEA POSITION, REGULATING CEA INSERTION LIMITS AND REACTOR COOLANT COLD LEG TEMPERATURE

This special test exception permits the CEAs to be positioned beyond the insertion limits and reactor coolant cold leg temperature to be outside limits during PHYSICS TESTS required to determine the isothermal temperature coefficient and power coefficient.

3/4.10.5 MINIMUM TEMPERATURE AND PRESSURE FOR CRITICALITY

This special test exception intentionally deleted.

POWER levels with T_{cold} below the minimum critical temperature and pressure during PHYSICS TESTS which are required to verify the low temperature physics predictions and to ensure the adequacy of design codes for reduced temperature conditions. The Low Power Physics Testing Program at low temperature (300°F) and a pressure of 500 psia is used to perform the following tests:

1. Biological shielding survey test
2. Isothermal temperature coefficient tests
3. CEA group tests
4. Boron worth tests
5. Critical configuration boron concentration