DCS (016)

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

April 15, 1985

Docket No. 50-390

Mr. H. G. Parris
Manager of Power
Tennessee Valley Authority
500A Chestnut Street, Tower II
Chattanooga, Tennessee 37401

Dear Mr. Parris:

Subject: Final Draft Technical Specifications for the Watts Bar Nuclear Plant, Unit 1

Enclosure (1) provides replacement pages to the Final Draft Technical Specifications for the Watts Bar Nuclear Plant, Unit 1 that were transmitted to you on December 11, 1984, and February 15, 1985, that are the results of resolution of certain issues on the facility.

However, a number of issues remain to be resolved that may require additional changes to the Watts Bar Unit 1 Technical Specifications. Enclosure 2 provides a listing of issues which may impact the Technical Specifications but the final determination cannot be made until the SER is finalized. Enclosure 3 provides a listing of items for which additional information is required from TVA to finalize the Technical Specifications. Enclosure 4 provides a list of new issues which TVA requested be included in the Technical Specifications in your April 10, 1985, submittal.

Any further changes requested by your staff, other than those required to correct editorial and/or typographical errors, are required to be docketed with justification for the requested changes. Accordingly, you are requested to certify under oath and affirmation that the December 11, 1984, Technical Specifications as modified by the February 15, 1985, letter and the attached page changes (dated April 14, 1985) accurately reflect the as-built facility, the FSAR (as amended), and the SER analysis prior to receipt of the Watts Bar license.

If you have any questions about this matter, please contact the project manager, T. J. Kenyon, at FTS 492-7266.

See Tech Specs

Sincerely,

8505010197 850415
PDR ADOCK 05000390
A PDR

Thomas M. Novak, Assistant Director
for Licensing
Division of Licensing

Enclosures:
As stated

DESIGNATED ORIGINAL
Certified By

cc: See next page

WATTS BAR

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2.0 SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

2.1 SAFETY LIMITS

REACTOR CORE

2.1.1 The combination of THERMAL POWER, pressurizer pressure, and the highest operating loop coolant temperature (T_{avg}) shall not exceed the limits shown in Figure 2.1-1 for four loop operation.

APPLICABILITY: MODES 1 and 2.

ACTION:

Whenever the point defined by the combination of the highest operating loop average temperature and THERMAL POWER has exceeded the appropriate pressurizer pressure line, be in HOT STANDBY within 1 hour, and comply with the requirements of Specification 6.7.1.

REACTOR COOLANT SYSTEM PRESSURE

2.1.2 The Reactor Coolant System pressure shall not exceed 2733 psig.

APPLICABILITY: MODES 1, 2, 3, 4, and 5.

ACTION:

MODES 1 and 2:

Whenever the Reactor Coolant System pressure has exceeded 2733 psig, be in HOT STANDBY with the Reactor Coolant System pressure within its limit within 1 hour, and comply with the requirements of Specification 6.7.1.

MODES 3, 4 and 5:

Whenever the Reactor Coolant System pressure has exceeded 2733 psig, reduce the Reactor Coolant System pressure to within its limit within 5 minutes, and comply with the requirements of Specification 6.7.1.

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
14. Steam Generator Water Level--Low-Low	$\geq$ 17% of narrow range span between 0 and 35% load, increasing linearly to $\geq$ 54.9% of narrow range span at 100% of nominal load	$\geq$ 15.0% of narrow range span between 0 and 35% load increasing linearly to $\geq$ 52.9% of narrow range span at 100% of nominal load
15. Steam Generator Water Level-Low Coincident With Steam/Feedwater Flow Mismatch	$<$ 38% of full steam flow at RATED THERMAL POWER coincident with steam generator water level $\geq$ 17% narrow range span between 0 and 35% load, increasing linearly to $\geq$ 54.9% of narrow range span at 100% of nominal load	$<$ 41.5% of full steam flow at RATED THERMAL POWER coincident with steam generator water level $\geq$ 15.0% of narrow range span between 0 and 35% load, increasing linearly to 52.9% of narrow range span at 100% of nominal load
16. Undervoltage-Reactor Coolant Pumps	$\geq$ 4830 volts-each bus	$\geq$ 4830 volts-each bus
17. Underfrequency-Reactor Coolant Pumps	$\geq$ 57 Hz - each bus	$\geq$ 56.9 Hz - each bus
18. Turbine Trip		
a. Low Trip System Pressure	$\geq$ 45 psig	$\geq$ 43 psig
b. Turbine Stop Valve Closure	$\geq$ 1% open	$\geq$ 1% open
19. Safety Injection Input from ESF	N.A.	N.A.

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TABLE 2.2-1 (Continued)

TABLE NOTATIONS (Continued)

Note 3: (continued)

K_6 = 0.00126/°F for T > T" and K_6 = 0 for T ≤ T",

T = As defined in Note 1,

T" = Indicated T_{avg} at RATED THERMAL POWER (Calibration temperature for ΔT instrumentation, ≤ 588.2°F),

S = As defined in Note 1, and

$f_2(\Delta I)$ = 0 for all ΔI.

NOTE 4: The channel's maximum Trip Setpoint shall not exceed its computed Trip Setpoint by more than 3.2%.

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CHARGING PUMP - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.3 One charging pump in the boron injection flow path required by Specification 3.1.2.1 shall be OPERABLE and capable of being powered from an OPERABLE emergency power source.

APPLICABILITY: MODES 4, 5 and 6.

ACTION:

With no charging pump OPERABLE or capable of being powered from an OPERABLE emergency power source, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.

SURVEILLANCE REQUIREMENTS

4.1.2.3.1 The above required charging pump shall be demonstrated OPERABLE by verifying that a discharge pressure of greater than or equal to 2400 psig is developed when tested pursuant to Specification 4.0.5.

4.1.2.3.2 All charging pumps, excluding the above required OPERABLE pump, shall be demonstrated inoperable at least once per 31 days, except when the reactor vessel head is removed, by verifying that the motor circuit breakers are tagged out, or the pump(s) is isolated from the RCS by a manually closed valve or by a motor-operated valve with the valve breaker tagged. Normal seal flow can be maintained at all times.

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
3. Containment Isolation (Continued)					
c. Containment Ventilation Isolation					
1) Manual Initiation	2	1	2	1, 2, 3, 4	17
2) Automatic Actuation Logic and Actuation Relays	2	1	2	1, 2, 3, 4	17
3) Safety Injection	See Item 1. above for all Safety Injection initiating functions and requirements.				
4. Steam Line Isolation					
a. Manual Initiation	1/steam line	1/steam line	1/operating steam line	1, 2, 3, 4	22
b. Automatic Actuation Logic and Actuation Relays	2	1	2	1, 2, 3	20
c. Containment Pressure--High-High (P-14)	4	2	3	1, 2, 3	16
d. Steam Flow in Two Steam Lines--High	2/steam line	1/steam line any 2 steam lines	1/steam line	1, 2, 3	15*
Coincident With Either T_{avg}--Low-Low	4 (1 T_{avg}/loop)	2	3	1, 2, 3	15*
Or Steam Line Pressure-Low	4 (1 pressure/ loop)	2	3	1, 2, 3	15*

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TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
5. Turbine Trip and Feedwater Isolation		
a. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
b. Steam Generator Water level--High-High (P-14)	≤ 82.4% of narrow range instrument span each steam generator	≤ 84.4% of narrow range instrument span each steam generator
6. Auxiliary Feedwater		
a. Manual Initiation	N. A.	N. A.
b. Automatic Actuation Logic and Actuation Relays	N. A.	N. A.
c. Steam Generator Water Level-Low-Low Start Motor-Driven Pumps and Turbine-Driven Pump	≥ 17% of narrow range instrument span between 0 and 35% load increasing linearly to ≥ 54.9% of narrow range span at 100% nominal load	≥15.0% of narrow range instrument span between 0 and 35% load increasing linearly to ≥ 52.9% of narrow range span at 100% nominal load
d. Safety Injection Start Motor-Driven Pumps and Turbine-Driven Pump	See Item 1. above for all Safety Injection Trip Setpoints/ Allowable Values.	
e. Loss-of-Offsite Power-Start Motor-Driven Pumps Start Turbine-Driven Pump		
1) Nominal Voltage Setpoint	4830 volts	4830 ± 96.6 volts
2) Relay Response Time	0.0 volt input to the inverse time relay with a 5 second time delay	0.0 volt input to the inverse time relay with a 5 ± 1 second time delay
f. Trip of All Main Feedwater Pumps - Start Motor-Driven Pumps and Turbine-Driven Pump	N.A.	N.A.

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TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
6. Auxiliary Feedwater (continued)		
g. Auxiliary Feedwater Suction Pressure-Low (Suction Transfer to ERCW)		
1) Supply Valve for Motor-Driven Pump	$\geq$ 1.70 psig	$\geq$ 0.95 psig
2) Supply Valve for Turbine-Driven Pump	$\geq$ 11.1 psig	$\geq$ 10.0 psig
7. Automatic Switchover To Containment Sump		
a. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
b. RWST Level - Low Coincident With	$\geq$ 130" from tank base	$\geq$ 126" from tank base
Containment Sump Level - High	$\geq$ 30" above elev. 703'	$\geq$ 32.5" above elev. 703'
And		
Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints/Allowable Values.	
8. 6.9 kV Shutdown Board		
a. Loss of Voltage		
1) Start Diesel Generator		
a) Nominal Voltage Setpoint	4830 volts	4830 ± 96.6 volts
b) Relay Response Time	0.0 volt input to the inverse time relay with a 1.5 second time delay	0.0 volt input to the inverse time relay with a 1.5 ± 0.5 second time delay

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TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
8. 6.9 kV Shutdown Board (continued)		
2) Load Shedding		
a) Nominal Voltage Setpoint	4830 volts	4830 ± 96.6 volts
b) Relay Response Time	0.0 volts with a 5 second time delay	0.0 volts with 5 ± 1 second time delay
b. Degraded Voltage		
1) Voltage Sensor	6560 volts	6560 ± 33 volts
2) Diesel Generator Start and Load Shedding Timer	300 seconds	300 ± 30 seconds
3) Safety Injection Degraded Voltage Logic Enable Timer	10 seconds	10 ± 1 seconds
9. Engineered Safety Features Actuation System Interlocks		
a. Pressurizer Pressure, P-11	$\leq$ 1970 psig	$\leq$ 1980 psig
b. Low-Low T_{avg}, P-12, increasing decreasing	$\geq$ 550°F $\leq$ 550°F	$\leq$ 552°F $\geq$ 548°F
c. Reactor Trip, P-4	N.A.	N.A.
d. Steam Generator Water Level, P-14	See Item 5. above for all Steam Generator Water Level-High-High Trip Setpoints and Allowable Values.	

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TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
3. Pressurizer Pressure-Low (Continued)	
5) Auxiliary Feedwater Pumps	$\leq 60^{(10)}$
6) Essential Raw Cooling Water	$\leq 65^{(2)}/75^{(1)}$
7) Control Room Isolation	N.A.
8) Component Cooling Water	$\leq 43^{(2)}/45^{(1)}$
9) Start Diesel Generators	≤ 12
4. Differential Pressure Between Steam Lines-High	
a. Safety Injection (ECCS)	$\leq 22^{(4)}/12^{(5)}$
1) Reactor Trip	≤ 2
2) Feedwater Isolation	$\leq 8^{(3)}$
3) Containment Isolation-Phase "A"$^{(6)}$	$\leq 18^{(2)}/28^{(1)}$
4) Containment Ventilation Isolation	N.A.
5) Auxiliary Feedwater Pumps	$\leq 60^{(10)}$
6) Essential Raw Cooling Water	$\leq 65^{(2)}/75^{(1)}$
7) Control Room Isolation	N.A.
8) Component Cooling Water	$\leq 43^{(2)}/45^{(1)}$
9) Start Diesel Generators	≤ 12
5. Steam Flow in Two Steam Lines - High Coincident with T_{avg} LowLow	
a. Safety Injection (ECCS)	$\leq 24^{(4)}/14^{(5)}$
1) Reactor Trip (from SI)	≤ 4
2) Feedwater Isolation	$\leq 10^{(3)}$
3) Containment Isolation-Phase "A"$^{(6)}$	$\leq 20^{(2)}/30^{(1)}$
4) Containment Ventilation Isolation	N.A.
5) Auxiliary Feedwater Pumps	$\leq 60^{(10)}$
6) Essential Raw Cooling Water	$\leq 67^{(2)}/77^{(1)}$
7) Control Room Isolation	N.A.
8) Component Cooling Water	$\leq 43^{(2)}/45^{(1)}$
9) Start Diesel Generators	≤ 14
b. Steam Line Isolation	≤ 9

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TABLE 3.3-5 (Continued)

TABLE NOTATIONS

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(1) Diesel generator starting and sequence loading delays included.

(2) Diesel generator starting and sequence loading delay not included. Offsite power available.

(3) Air operated valves.

(4) Diesel generator starting and sequence loading delay included. RHR & SI pumps not included.

(5) Diesel generator starting and sequence loading delays not included. SI and RHR pumps not included.

(6) The following valves are exceptions to the response time shown in the table and will have the following response times for the initiating signals and functions:

FCV-70-143		FCV-62-77 and FCV-26-240, -243		FCV-61-96, -97, -110, -122, -191, -192, -193, -194	
2.a.3	68(2)/78(1)	2.a.3	22(2)/32(1)	2.a.3	32
3.a.3	68(2)/78(1)	3.a.3	22(2)/32(1)	3.a.3	32
4.a.3	68(2)/78(1)	4.a.3	22(2)/32(1)	4.a.3	32
5.a.3	70(2)/80(1)	5.a.3	24(2)/34(1)	5.a.3	34
6.a.3	68(2)/78(1)	6.a.3	22(2)/32(1)	6.a.3	32

(7) On 2/3 any steam generator.

(8) On 2/3 in 2/4 steam generators.

(9) The response time is measured from the time the 6.9 kV shutdown boards voltage exceeds the Setpoint until the time full voltage is returned for the loss of voltage sensors; or from the time the degraded voltage timers generate a signal to start the diesels or shed loads until the time full voltage is returned for the degraded voltage sensors.

(10) For motor-driven pumps only, the diesel generator starting and sequence loading delays are included.

TABLE 4.3-2

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Safety Injection (Reactor Trip, Turbine Trip, Feedwater, Isolation, Control Room Isolation, Start Diesel Generators, Component Cooling Water, and Essential Raw Cooling Water)								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q(4)	1, 2, 3, 4
c. Containment Pressure-High	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4
d. Pressurizer Pressure-Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
e. Differential Pressure Between Steam Lines--High	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
f. Steam Flow in Two Steam Lines--High Coincident With	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
Either 1) T_{avg}--Low-Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
Or 2) Steam Line Pressure--Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, [illegible]
2. Containment Spray								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Containment Pressure--High-High	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3

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TABLE 4.3-2 (Continued)

TABLE NOTATION

(1) Each train shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(2) Monthly testing shall consist of relay testing excluding final actuation of the pumps or valves.

(3) Monthly testing shall consist of voltage sensor relay testing excluding actuation of the load shedding, diesel start, and time-delay timers.

(4) Slave relays K603A, K603B, K604A, K604B (SI) and K625A, K625B (Phase B isolation) shall be tested during each cold shutdown exceeding 24 hours unless tested during the previous 92 days. K609A, K609B (SI) shall be tested every 18 months.

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SEISMIC INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.3 The seismic monitoring instrumentation shown in Table 3.3-7 shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

a. With one or more of the above required seismic monitoring instruments inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrument(s) to OPERABLE status.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.3.1 Each of the above required seismic monitoring instruments shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and ANALOG CHANNEL OPERATIONAL TEST operations at the frequencies shown in Table 4.3-4.

4.3.3.3.2 Each of the above required seismic monitoring instruments actuated during a seismic event shall be restored to OPERABLE status within 24 hours and a CHANNEL CALIBRATION performed within 10 days following the seismic event. Data shall be retrieved from actuated instruments and analyzed to determine the magnitude of the vibratory ground motion. A Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 14 days describing the magnitude, frequency spectrum and resultant effect upon facility features important to safety.

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TABLE 3.3-7

SEISMIC MONITORING INSTRUMENTATION

INSTRUMENTS AND SENSOR LOCATIONS	MEASUREMENT RANGE	MINIMUM INSTRUMENTS OPERABLE
1. Triaxial Time-History Accelerographs		
a. 0-XT-52-75A Annulus El. 703	0 - 1.0g	1*
b. 0-XT-52-75B Cont. El. 757	0 - 1.0g	1*
c. 0-XT-52-75D D/G Bldg. El. 742	0 - 1.0g	1*
2. Triaxial Peak Accelerographs		
a. 0-XR-52-76A Cont. El. 725	0 - 5.0 g	1
b. 0-XR-52-76B Cont. El. 730	0 - 2.0 g	1
c. 0-XR-52-76D Control Bldg. El. 755	0 - 2.0 g	1
3. Triaxial Seismic Switches		
0-XS-52-80 Annulus El. 703	0.025 - 0.25g	1*
4. Triaxial Response-Spectrum Recorders		
a. 0-XR-52-77A Annulus El. 703	2 - 25.4 Hz	1*
b. 0-XR-52-77B Cont. El. 757	2 - 25.4 Hz	1
c. 0-XR-52-77D Aux. Cont. Room El. 757	2 - 25.4 Hz	1
d. 0-XR-52-77E D/G Bldg. El. 742	2 - 25.4 Hz	1

*With reactor control room indication

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TABLE 4.3-4

SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENTS AND SENSOR LOCATIONS	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST
1. Triaxial Time-History Accelerographs			
a. 0-XT-52-75A Annulus El. 703**	M*	R***	SA
b. 0-XT-52-75B Cont. El. 757**	M*	R***	SA
c. 0-XT-52-75D D/G Bldg. El. 742**	M*	R***	SA
2. Triaxial Peak Accelerographs			
a. 0-XR-52-76A Cont. El. 725	N.A.	R	N.A.
b. 0-XR-52-76B Cont. El. 730	N.A.	R	N.A.
c. 0-XR-52-76D Control Bldg. El. 755	N.A.	R	N.A.
3. Triaxial Seismic Switches			
0-XS-52-80 Annulus El. 703**	M	R	SA
4. Triaxial Response-Spectrum Recorders			
a. 0-XR-52-77A Annulus El. 703**	M	R	SA
b. 0-XR-52-77B Cont. El. 757	N.A.	R	N.A.
c. 0-XR-52-77D Aux. Cont. Room El. 757	N.A.	R	N.A.
d. 0-XR-52-77E D/G Bldg. El. 742	N.A.	R	N.A.

*Except seismic trigger.
**With reactor control room indications.
***Includes seismic trigger.

TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM CHANNELS OPERABLE
1. Containment Pressure	2	1
2. Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	2	1
3. Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	2	1
4. Reactor Coolant Pressure - Wide Range	2	1
5. Pressurizer Water Level	2	1
6. Steam Line Pressure	2/steam line	1/steam line
7. Steam Generator Water Level - Narrow Range	1/steam generator	1/steam generator
8. Steam Generator Water Level - Wide Range	1/steam generator	1/steam generator
9. Refueling Water Storage Tank Water Level	2	1
10. Auxiliary Feedwater Flow Rate	2/steam generator	1/steam generator
11. Reactor Coolant System Subcooling Margin Monitor	2	1
12. PORV Position Indicator*		
a. Stem-Operated Limit Switches	1/Valve	1/Valve
b. Acoustic Monitor	1/Valve	0
13. PORV Block Valve Position Indicator**	2/Valve	1/Valve
14. Safety Valve Position Indicator		
a. Acoustic Monitor	1/Valve	1/Valve
b. Temperature Monitor Downstream of Valve	1/Valve	0
15. Containment Sump Water Level	2	1
16. In Core Thermocouples	4/core quadrant	2/core quadrant
17. Essential Raw Cooling Water Flow	2	1

*Not applicable if the associated block valve is in the closed position.
**Not applicable if the block valve is verified closed with power to the valve operator removed.

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TABLE 3.3-10 (Continued)

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM CHANNELS OPERABLE
18. Shield Building Vent-High Range Noble Gas Monitor (RE-90-401)	N.A.	1
19. Condenser Vacuum Exhaust Vent-High Range Noble Gas Monitor (RE-90-404)	N.A.	1
20. Steam Line Relief-Noble Gas Monitor (RE-90-421, 422, 423, and 424)	N.A.	1/steam line
21. Reactor Vessel Water Level#	2	1
22. Containment Atmosphere - High Range Monitor (RE-90-271, 272, 273, and 274)	N.A.	1/upper containment & 1/lower containment

#The OPERABILITY requirements for the Reactor Vessel Water Level system are not applicable until startup following the first refueling outage.

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TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
1. Containment Pressure	M	R
2. Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	M	R
3. Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	M	R
4. Reactor Coolant Pressure - Wide Range	M	R
5. Pressurizer Water Level	M	R
6. Steam Line Pressure	M	R
7. Steam Generator Water Level - Narrow Range	M	R
8. Steam Generator Water Level - Wide Range	M	R
9. Refueling Water Storage Tank Water Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R
12. PORV Position Indicator		
a. Stem-Operated Limit Switch	M	R
b. Acoustic Monitor	M	R
13. PORV Block Valve Position Indicator	M	R
14. Safety Valve Position Indicator		
a. Acoustic Monitor	M	R
b. Temperature Monitor Downstream of Valve	M	R
15. Containment Sump Water Level	M	R
16. In Core Thermocouples	M	R
17. Essential Raw Cooling Water Flow	M	R

TABLE 4.3-7 (Continued)

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
18. Shield Building Vent-High Range Noble Gas Monitor (RE-90-401)	M	R*
19. Condenser Vacuum Exhaust Vent-High Range Noble Gas Monitor (RE-90-404)	M	R*
20. Steam Line Relief-Noble Gas Monitor (RE-90-421, 422, 423, and 424)	M	R*
21. Reactor Vessel Water Level**	M	R
22. Containment Atmosphere - High Range Monitor (RE-90-271, 272, 273, and 274)	M	R*

*CHANNEL CALIBRATION may consist of an electronic calibration of the channel, not including the detector, for range decades above 10R/h and a one point calibration check of the detector below 10R/h with an installed or portable gamma source.

**The surveillance requirements for the Reactor Vessel Water Level system are not applicable until startup following the first refueling outage.

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TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTATION

ZONE	INSTRUMENT LOCATION	TOTAL NUMBER OF INSTRUMENTS** HEAT (x/y)	FLAME (x/y)	SMOKE (x/y)
B.	Control Building (Continued)			
214	Mech. Equip. Rm., Col. C1-C2, El. 755			0/5
215	Mech. Equip. Rm., Col. C1-C2, El. 755			0/5
216	CR Fltr. B, Duct Det., El. 755			0/1
217	CR Fltr. B, Duct Det., El. 755			0/1
218	CR Fltr. A, Duct Det., El. 755			0/1
219	CR Fltr. A, Duct Det., El. 755			0/1
220	Main CR, El. 755			27/0
226	Electric Cont. Bds., El. 755			12/0
229	Main Cont. Bds., El. 755			8/0
221	Tech Support Center, El. 755			0/6
222	Tech Support Center, El. 755			0/6
223	PSO Eng. Shop, El. 755			0/1
224	PSO Eng. Shop, El. 755			0/1
225	Relay Bd. Rm., El. 755			11/0
227	Operation Living Area, El. 755			0/8
228	Operation Living Area, El. 755			0/8
267	Aux. Instr. Rm., Unit 1, El. 708			0/8
268	Aux. Instr. Rm., Unit 1, El. 708			0/10
269	Computer Rm., El. 708			0/4
270	Computer Rm., El. 708			0/4
271	Aux. Instr. Rm., Unit 2, El. 708			0/8
272	Aux. Instr. Rm., Unit 2, El. 708			0/10
273	Computer Rm. Corridor, El. 708			3/0

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TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTATION

ZONE	INSTRUMENT LOCATION	TOTAL NUMBER OF INSTRUMENTS** HEAT (x/y)	FLAME (x/y)	SMOKE (x/y)
B.	Control Building (Continued)			
298	Common Main Cont. Boards & M-15, El. 755			12/0
412	Duplex Relay Bds., El. 755			4/0
50	Mech. Equip. Rm. Col. C1, El. 692			0/2
51	Mech. Equip. Rm. Col. C1, El. 692			0/2
52	Mech. Equip. Rm. Col. C3, El. 692			0/2
53	Mech. Equip. Rm. Col. C3, El. 692			0/2
54	Battery Rm., El. 692			0/3
55	Battery Rm., El. 692			0/3
56	Battery Bd. Rm., El. 692			2/0
57	Battery Bd. Rm., El. 692			2/0
58	Battery Bd. Rm., El. 692			2/0
59	Battery Bd. Rm., El. 692			2/0
60	Battery Rm., El. 692			0/3
61	Battery Rm., El. 692			0/3
62	Battery Rm., El. 692			0/3
63	Battery Rm., El. 692			0/3
64	Battery Bd. Rm., El. 692			2/0
65	Battery Bd. Rm., El. 692			2/0
387	Control/Turbine Bldg. Wall	0/26		
C.	Auxiliary Building			
39	Cont. Spray Pump 1A-A, El. 676			2/0
40	Cont. Spray Pump 1B-B, El. 676			2/0

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TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTATION

ZONE	INSTRUMENT LOCATION	TOTAL NUMBER OF INSTRUMENTS** HEAT (x/y)	FLAME (x/y)	SMOKE (x/y)
C.	Auxiliary Building (Continued)			
43	RHR Pump 1A-A, El. 676			2/0
44	RHR Pump 1B-B, El. 676			2/0
47	Corridor of Aux. Bldg., El. 676			11/0
70	A5-A11, Col. W-X, El. 692			0/5
71	A5-A11, Col. W-X, El. 692			0/5
72	Aux. FW Pump Turbine 1A-S, El. 692			0/1
73	Aux. FW Pump Turbine 1A-S, El. 692			0/1
76	S.I. & Charging Pump Rms., El. 692			0/5
77	S.I. Pump Rm. 1A, El. 692			0/1
78	S.I. Pump Rm. 1B, El. 692			0/1
79	Charging Pump Rm. 1C, El. 692			0/1
80	Charging Pump Rm. 1B, El. 692			0/1
81	Charging Pump Rm. 1A, El. 692			0/1
88	Aux. Bldg. Corridor A1-A8, El. 692			0/8
89	Aux. Bldg. Corridor A1-A8, El. 692			0/8
90	Aux. Bldg. Corridor A8-A15, El. 692			0/8
91	Aux. Bldg. Corridor A8-A15, El. 692			0/8
92	Aux. Bldg. Corridor Col. U-W, El. 692			0/4
93	Aux. Bldg. Corridor Col. U-W, El. 692			0/4
94	Pipe Gallery, El. 692			0/2
95	Pipe Gallery, El. 692			0/2

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TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTATION

ZONE	INSTRUMENT LOCATION	TOTAL NUMBER OF INSTRUMENTS** HEAT (x/y)	FLAME (x/y)	SMOKE (x/y)
C.	Auxiliary Building (Continued)			
98	Cntmt. Purge Air Fltr., A & B, Duct. Det., El. 713			0/2
99	Cntmt. Purge Air Fltr., A & B, Duct. Det., El. 713			0/2
102	Pipe Gallery, El. 713			0/4
103	Pipe Gallery, El. 713			0/4
106	Aux. Bldg. A5-A11, Col. T-W, El. 713			0/8
107	Aux. Bldg. A5-A11, Col. T-W, El. 713			0/8
108	Radio Chemical Lab. Area, El. 713			0/3
109	Radio Chemical Lab. Area, El. 713			0/3
110	Aux. Bldg. A1-A8, Col. Q-U, El. 713			0/18
111	Aux. Bldg. A1-A8, Col. Q-U, El. 713			0/19
112	Aux. Bldg. A8-A15, Col. Q-U, El. 713			0/9
113	Aux. Bldg. A8-A15, Col. Q-U, El. 713			0/9
114	Waste Packaging Area, El. 729			0/3
115	Waste Packaging Area, El. 729			0/3
116	Cask Loading Area, El. 729			0/2
117	Cask Loading Area, El. 729			0/2
118	New Fuel Storage Area			4/0
120	Aux. Bldg. Gas Trtmt. Fltr., El. 737			1/0
121	Aux. Bldg. Gas Trtmt. Fltr., El. 737			1/0
123	Vol. Control Tank Rm. 1A, El. 713			0/3
125	Vol. Control Tank Rm. 1A, El. 713			0/3
128	Post Accident Samp. Fac. U-1, El. 729			0/3
129	Post Accident Samp. Fac. U-1, El. 729			0/3

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TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTATION

ZONE	INSTRUMENT LOCATION	TOTAL NUMBER OF INSTRUMENTS** HEAT (x/y)	FLAME (x/y)	SMOKE (x/y)
C.	Auxiliary Building (Continued)			
242	480V XFMR Rm. 1A, El. 772			0/3
243	480V XFMR Rm. 1B, El. 772			0/3
244	480V XFMR Rm. 1B, El. 772			0/3
245	480V XFMR Rm. 2A, El. 772			0/3
246	480V XFMR Rm. 2A, El. 772			0/3
247	480V XFMR Rm. 2B, El. 772			0/3
248	480V XFMR Rm. 2B, El. 772			0/3
249	125V Batt. Rm. I, El. 772			2/0
251	125V Batt. Rm. II, El. 772			2/0
253	125V Batt. Rm. III, El. 772			2/0
255	125V Batt. Rm. IV, El. 772			2/0
257	480V Bd. Rm. 1B, El. 772			0/4
258	480V Bd. Rm. 1B, El. 772			0/4
259	480V Bd. Rm. 1A, El. 772			0/4
260	480V Bd. Rm. 1A, El. 772			0/4
261	480V Bd. Rm. 2A, El. 772			0/4
262	480V Bd. Rm. 2A, El. 772			0/4
263	480V Bd. Rm. 2B, El. 772			0/4
264	480V Bd. Rm. 2B, El, 772			0/4
330	Pipe Chase, U-1, El. 737, 713, 692			20/0
332	North Main Stm. Vlv. Rm., El. 737			4/0
333	South Main Stm. Vlv. Rm., El. 737			4/0
455	Post Accident Samp. Fac., U-1, El. 737			0/2
456	Post Accident Samp. Fac., U-1, El. 737			0/2
D.	Additional Equipment Building			
122	Add. Eqpt. Bldg., Unit 1, El. 729			6/0
154	Add. Eqpt. Bldg., Unit 1, El. 763.5			6/0
231	Add. Eqpt. Bldg., El. 786.5			4/0

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TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTATION

ZONE	INSTRUMENT LOCATION	TOTAL NUMBER OF INSTRUMENTS** HEAT (x/y)	FLAME (x/y)	SMOKE (x/y)
D.	Additional Equipment Building (Continued)			
232	Add. Eqpt. Bldg., El. 775.25			4/0
E.	Intake Pumping Station			
250	ERCW Pmp. Rm., El. 741	4/0		
277	Strainer Rm., El. 722			18/0
278	ECRW Pmp. Rm., El 741	4/0		
405	Elect. Bd. Rm., El. 711			0/5
406	Elect. Bd. Rm., El. 711			0/5
F.	Containment#			
352	Lwr. Compt. Coolers, El. 716			4/0
354	Upr. Compt. Coolers, El. 801			4/0
356	RCP 2, El. 716		0/2	
357	RCP 2, El. 716	0/2		
360	RCP 1, El. 716		0/2	
361	RCP 1, El. 716	0/2		
364	RCP 3, El. 716		0/2	
365	RCP 3, El. 716	0/2		
368	RCP 4, El. 716		0/2	
369	RCP 4, El. 716	0/2		
372	Reactor Bldg. Annulus			0/20
373	Reactor Bldg. Annulus			0/19
457	Reactor Bldg. Annulus			0/9
458	Reactor Bldg. Annulus			0/8

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TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTATION

ZONE	INSTRUMENT LOCATION	TOTAL NUMBER OF INSTRUMENTS** HEAT (x/y)	FLAME (x/y)	SMOKE (x/y)
G.	Additional Diesel Generator Building			
425	Add. D/G Rm., Fuel Trf. Rm. & Pipe Gallery	0/8		
426	Add. D/G Rm., Fuel Trf. Rm. & Pipe Gallery	0/8		
427	Add. D/G Rm., Bd. Rm.			0/4
428	Add. D/G Rm., Bd. Rm.			0/4
429	Add. D/G Rm., C-S Relay Bd.			3/0
430	Add. D/G Rm., Corridor Fire Prot. Rm., Closet, Intake & Exhaust Rm.	11/0		4/0
432	Add. D/G B Conduit Interface Rm.			9/0

**(x/y): x is a number of Function A (early warning fire detection and notification only) instruments.
y is number of Function B (actuation of fire suppression systems and early warning and notification) instruments.

#The fire detection instruments located within the containment are not required to be OPERABLE during the performance of Type A containment leakage rate tests.

TABLE 3.3-12

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	ACTION
1. Radioactivity Monitors Providing Alarm and Automatic Termination of Release		
a. Waste Disposal System Liquid Effluent Line (RE-90-122)	1	31
b. Steam Generator Blowdown Effluent Line (RE-90-120 and 121)	1	32
c. Condensate Demineralizer Regenerant Effluent Line (RE-90-225)	1	31
2. Radioactivity Monitors Providing Alarm But Not Providing Automatic Termination of Release		
a. Essential Raw Cooling Water Effluent Line (RE-90-133 & 90-140 or RE-90-134 & 90-141)	1/discharge header	33
b. Turbine Building Sump Effluent Line (RE-90-212)	1	33
c. Plant Liquid Discharge Line (RE-90-211)	1	33
3. Flow Rate Measurement Devices		
a. Waste Disposal System Liquid Radwaste Effluent Line	1	34
b. Steam Generator Blowdown Effluent Line	1	34
c. Condensate Demineralizer Regenerant Effluent Line	1	34
d. Diffuser Discharge Effluent Line	1	34
4. Tank Level Indicating Devices		
a. Condensate Storage Tank	1	35
b. Steam Generator Layup Tank*	1	35

*Required when connected to the Secondary Coolant System.

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TABLE 4.3-8

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST
1. Radioactivity Monitors Providing Alarm and Automatic Termination of Release				
a. Waste Disposal System Liquid Effluent Line (RE-90-122)	D	P	R(3)	Q(1)
b. Steam Generator Blowdown Effluent Line (RE-90-120 and 121)	D	M	R(3)	Q(1)
c. Condensate Demineralizer Regenerant Effluent Line (RE-90-225)	D	M	R(3)	Q(2)(5)
2. Radioactivity Monitors Providing Alarm But Not Providing Automatic Termination of Release				
a. Essential Raw Cooling Water Effluent Line (RE-90-133 & 90-140 or RE-90-134 & 90-141)	D	M	R(3)	Q(2)
b. Turbine Building Sump Effluent Line (RE-90-212)	D	M	R(3)	Q(2)
c. Plant Liquid Discharge Line (RE-90-211)	D	M	R(3)	Q(2)
3. Flow Rate Measurement Devices				
a. Waste Disposal System Liquid Effluent Line	D(4)	N.A.	R	Q
b. Steam Generator Blowdown Effluent Line	D(4)	N.A.	R	Q
c. Condensate Demineralizer Regenerant Effluent Line	D(4)	N.A.	R	Q
d. Diffuser Discharge Effluent Line	D(4)	N.A.	R	Q
4. Tank Level Indicating Devices				
a. Condensate Storage Tank	D*	N.A.	R	Q
b. Steam Generator Layup Tank	D*	N.A.	R	N.A.

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TABLE 4.3-8 (Continued)

TABLE NOTATIONS

* During liquid additions to the tank.

(1) The ANALOG CHANNEL OPERATIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exists:

a. Instrument indicates measured levels above the Alarm/Trip Setpoint, or

b. Circuit failure, or

c. Instrument indicates downscale failure.

(2) The ANALOG CHANNEL OPERATIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:

a. Instrument indicates measured levels above the Alarm Setpoint, or

b. Circuit failure, or

c. Instrument indicates downscale failure.

(3) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards (NBS) or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

(4) CHANNEL CHECK shall consist of verifying indication of flow during periods of release. CHANNEL CHECK shall be made at least once per 24 hours on days on which continuous, periodic, or batch releases are made.

(5) The ANALOG CHANNEL OPERATIONAL TEST shall also demonstrate that automatic isolation of this pathway occurs if the instrument indicates measured levels above the Alarm Setpoint.

TABLE 3.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1. WASTE GAS HOLDUP SYSTEM (RE-90-118)			
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release	1	*	37
b. Effluent System Flow Rate Measuring Device	1	*	38
2. WASTE GAS HOLDUP SYSTEM Explosive Gas Monitoring System			
a. Hydrogen Monitor	1	**	40
b. Oxygen Monitor	1	**	40
3. Condenser Vacuum Exhaust System (RE-90-119 or RE-90-99)			
a. Noble Gas Activity Monitor	1	*	39
b. Effluent System Flow Rate Measuring Device	1	*	38
c. Monitor Flow Rate Measuring Device	1	*	38
d. Iodine Sampler	1	****	41
e. Particulate Sampler	1	****	41
f. Sampler Flow Rate Measuring Device	1	****	38
4. Shield Building Exhaust System (RE-90-400)			
a. Noble Gas Activity Monitor (Low Range)	1	***	39
b. Iodine Sampler	1	***	41
c. Particulate Sampler	1	***	41
d. Effluent System Flow Rate Measuring Device	1	***	38
e. Sampler Flow Rate Measuring Device	1	***	38
f. Monitor Flow Rate Measuring Device	1	***	38

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TABLE 4.3-9

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. WASTE GAS HOLDUP SYSTEM (RE-90-118)					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release	P	P	R(3)	Q(1)	*
b. Effluent System Flow Rate Measuring Device	D	N.A.	R	Q	****
2. WASTE GAS HOLDUP SYSTEM Explosive Gas Monitoring System					
a. Hydrogen Monitor	D	N.A.	Q(4)	M	**
b. Oxygen Monitor	D	N.A.	Q(5)	M	**
3. Condenser Vacuum Exhaust System (RE-90-119 or RE-90-99)					
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)	*
b. Effluent System Flow Rate Measuring Device	D	N.A.	R	Q	*
c. Monitor Flow Rate Measuring Device	D	N.A.	R	Q	*
d. Iodine Sampler	W	N.A.	N.A.	N.A.	*****
e. Particulate Sampler	W	N.A.	N.A.	N.A.	*****
f. Sampler Flow Rate Measuring Device	D	N.A.	R	Q	*****
4. Shield Building Exhaust System (RE-90-400)					
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)	***
b. Iodine Sampler	W	N.A.	N.A.	N.A.	***
c. Particulate Sampler	W	N.A.	N.A.	N.A.	***
d. Effluent System Flow Rate Measuring Device	D	N.A.	R	Q	***

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

a. Monitoring the lower containment atmosphere gaseous or particulate radioactivity monitor for relative change at least once per 12 hours;

b. Monitoring the containment pocket sump inventory and discharge at least once per 12 hours;

c. Measurement of the CONTROLLED LEAKAGE to the reactor coolant pump seals when the Reactor Coolant System pressure is 2235 ± 20 psig at least once per 31 days. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4;

d. Performance of a Reactor Coolant System water inventory balance at least once per 72 hours or within 1 hour of receiving an alarm which indicates intersystem leakage; and

e. Monitoring the Reactor Head Flange Leakoff System at least once per 24 hours.

4.4.6.2.2 Each Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1 shall be demonstrated OPERABLE by verifying leakage to be within its limit:

a. At least once per 18 months;

b. Prior to entering MODE 2 whenever the plant has been in COLD SHUTDOWN for 72 hours or more and if leakage testing has not been performed in the previous 9 months;

c. Prior to returning the valve to service following maintenance, repair or replacement work on the valve; and

d. Within 24 hours following valve actuation due to automatic or manual action or flow through the valve.

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

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REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION

3.4.9.1 The Reactor Coolant System (except the pressurizer) temperature and pressure shall be limited in accordance with the limit lines shown on Figures 3.4-2 and 3.4-3 during heatup, cooldown, criticality, and inservice leak and hydrostatic testing with:

a. A maximum heatup of 100°F in any 1-hour period,

b. A maximum cooldown of 100°F in any 1-hour period, and

c. A maximum temperature change of less than or equal to 10°F in any 1-hour period during inservice hydrostatic and leak testing operations above the heatup and cooldown limit curves.

APPLICABILITY: At all times.

ACTION:

With any of the above limits exceeded, restore the temperature and/or pressure to within the limit within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the Reactor Coolant System; determine that the Reactor Coolant System remains acceptable for continued operation or be in at least HOT STANDBY within the next 6 hours and reduce the RCS T_{avg} and pressure to less than 200°F and 500 psig, respectively, within the following 30 hours.

SURVEILLANCE REQUIREMENTS

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

4.4.9.1.2 The reactor vessel material irradiation surveillance specimens shall be removed and examined, to determine changes in material properties, as required by 10 CFR Part 50, Appendix H in accordance with the schedule in Table 4.4-5. The results of these examinations shall be used to update Figures 3.4-2, 3.4-3, and 3.4-4.

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REACTOR COOLANT SYSTEM VENTS

LIMITING CONDITION FOR OPERATION

3.4.11 Two Reactor Coolant System Vent (RCSV) paths shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With only one RCSV path OPERABLE, STARTUP and/or POWER OPERATION may continue provided the inoperable path is maintained closed with power removed from the valve actuators; restore the inoperable path to OPERABLE status within 30 days; or be in HOT STANDBY within 6 hours and HOT SHUTDOWN within the following 6 hours.

b. With no RCSV path OPERABLE, restore at least one path to OPERABLE status within 72 hours or be in HOT STANDBY within 6 hours and HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.11.1 Each RCSV path shall be demonstrated OPERABLE at least once per 18 months by:

a. Verifying that the upstream manual isolation valve is locked in the opened position, and

b. Operating each remotely controlled valve through at least one complete cycle of the full travel from the control room.

c. Verifying flow through the RCSV paths during venting.

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3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.1 ACCUMULATORS

COLD LEG INJECTION

LIMITING CONDITION FOR OPERATION

3.5.1.1 Each Cold Leg Injection Accumulator System shall be OPERABLE with:

a. The isolation valve open and power removed,

b. A contained borated water volume of between 7779 and 8206 gallons,

c. A boron concentration of between 1900 and 2100 ppm, and

d. A nitrogen cover-pressure of between 335 and 385 psig.

APPLICABILITY: MODES 1, 2, and 3*.

ACTION:

a. With one Cold Leg Injection Accumulator System inoperable, except as a result of a closed isolation valve, restore the inoperable accumulator to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With one Cold Leg Injection Accumulator System inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.1.1.1 Each Cold Leg Injection Accumulator System shall be demonstrated OPERABLE:

a. At least once per 12 hours by:

1) Verifying, by the absence of alarms or by measurement of levels and pressures, the contained borated water volume and nitrogen cover-pressure in the tanks, and

2) Verifying that each cold leg injection accumulator isolation valve is open.

---

*Pressurizer pressure above 1000 psig.

4.5.3.1 The ECCS subsystem shall be demonstrated OPERABLE per the applicable requirements of Specification 4.5.2.

4.5.3.2 All charging pumps and Safety Injection pumps, except the above allowed OPERABLE pumps, shall be demonstrated inoperable at least once per 12 hours whenever the temperature of one or more of the RCS cold legs is less than or equal to 350°F by verifying that the motor circuit breakers are tagged out, or the pump(s) is isolated from the RCS by a manually closed valve or by a motor-operated valve with the valve breaker tagged. Normal seal flow can be maintained at all times.

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LIMITING CONDITION FOR OPERATION

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3.6.1.8 Two independent Emergency Gas Treatment System (EGTS) trains shall be OPERABLE, and the annulus pressure shall be equal to or more negative than minus 5.0 inches Water Gauge with respect to the Mechanical Equipment Room.

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

ACTION:

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

b. With the annulus pressure more positive than minus 5.0 inches Water Gauge with respect to the Mechanical Equipment Room, restore the annulus pressure to within the limit within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.8.1 Each EGTS train shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS, by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 continuous hours with the heaters operating;

b. At least once per 18 months, or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system, by:

1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% and uses the test procedure guidance 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 4000 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, for a methyl iodide penetration of less than 0.2%; and

*The LIMITING CONDITION FOR OPERATION with respect to annulus pressure is not applicable during venting operations, required annulus entries or Auxiliary Building isolations not exceeding 1 hour in duration.

4.6.3.2 Each isolation valve specified in Table 3.6-2 shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

a. Verifying that on a Phase "A" Isolation test signal, each Phase "A" isolation valve actuates to its isolation position;

b. Verifying that on a Phase "B" Isolation test signal, each Phase "B" isolation valve actuates to its isolation position; and

c. Verifying that on a Containment Ventilation Isolation test signal, each ventilation isolation valve actuates to its isolation position.

d. Verify that on a simulated LOCA signal, power to the following valves is automatically deenergized:

FSV-62-72
FSV-62-73
FSV-62-74
FSV-62-76
FSV-87-7
FSV-87-8

4.6.3.3 The isolation time of each power operated or automatic valve of Table 3.6-2 shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NUMBER	FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
3. Phase "A" Containment Vent Isolation (Cont.)		
FCV-30-19#	Inst Room Purge Air Supply	≤ 4
FCV-30-20#	Inst Room Purge Air Supply	≤ 4
FCV-30-37#	Lower Compt Pressure Relief	≤ 4
FCV-30-40#	Lower Compt Pressure Relief	≤ 4
FCV-30-50#	Upper Compt Purge Air Exh	≤ 4
FCV-30-51#	Upper Compt Purge Air Exh	≤ 4
FCV-30-52#	Upper Compt Purge Air Exh	≤ 4
FCV-30-53#	Upper Compt Purge Air Exh	≤ 4
FCV-30-56#	Lower Compt Purge Air Exh	≤ 4
FCV-30-57#	Lower Compt Purge Air Exh	≤ 4
FCV-30-58#	Inst Room Purge Air Exh	≤ 4
FCV-30-59#	Inst Room Purge Air Exh	≤ 4
FCV-90-107	Cntmt Bldg LWR Compt Air Mon	≤ 5
FCV-90-108	Cntmt Bldg LWR Compt Air Mon	≤ 5
FCV-90-109	Cntmt Bldg LWR Compt Air Mon	≤ 5
FCV-90-110	Cntmt Bldg LWR Compt Air Mon	≤ 5
FCV-90-111	Cntmt Bldg LWR Compt Air Mon	≤ 5
FCV-90-113#	Cntmt Bldg Up Compt Air Mon	≤ 5
FCV-90-114#	Cntmt Bldg Up Compt Air Mon	≤ 5
FCV-90-115#	Cntmt Bldg Up Compt Air Mon	≤ 5
FCV-90-116#	Cntmt Bldg Up Compt Air Mon	≤ 5
FCV-90-117#	Cntmt Bldg Up Compt Air Mon	≤ 5
4. Manual		
FCV-43-201**	Hydrogen Analyzer	N.A.
FCV-43-202**	Hydrogen Analyzer	N.A.
FCV-43-207**	Hydrogen Analyzer	N.A.
FCV-43-208**	Hydrogen Analyzer	N.A.
FCV-43-250**	Post Acc Samp Hot Leg 1 Train A	N.A.
FCV-43-251**	Post Acc Samp Hot Leg 1 Train A	N.A.
FCV-43-287**	Post Acc Samp Cont Intake Train A	N.A.

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TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NUMBER	FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
4. Manual (Cont.)		
FCV-43-288**	Post Acc Samp Cont Intake Train A	N.A.
FCV-43-307**	Post Acc Samp Cont Air Return Train A	N.A.
FCV-43-309**	Post Acc Samp Hot Leg 3 Train B	N.A.
FCV-43-310**	Post Acc Samp Hot Leg 3 Train B	N.A.
FCV-43-318**	Post Acc Samp Cont Intake Train B	N.A.
FCV-43-319**	Post Acc Samp Cont Intake Train B	N.A.
FCV-43-325**	Post Acc Samp Cont Air Ret Train B	N.A.
FCV-43-341**	Post Acc Samp Ret to Cont Sump Train B	N.A.
FCV-43-342**	Post Acc Samp Ret to Cont Sump Train A	N.A.

*Not subject to Type C leakage tests.

**May be opened on an intermittent basis under administrative controls.

#The provisions of Specification 3.0.4 are not applicable if the requirements of items b or c of the ACTION statement are met.

##The provisions of Specification 3.0.4 are not applicable if the requirements of items b or c of the ACTION statement are met, and at least one other path of the affected system is OPERABLE.

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3/4.6.4 COMBUSTIBLE GAS CONTROL

HYDROGEN MONITORS

LIMITING CONDITION FOR OPERATION

3.6.4.1 Two independent containment hydrogen monitors shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

a. With one hydrogen monitor inoperable, restore the inoperable monitor to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

b. With both hydrogen monitors inoperable, restore at least one monitor to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each hydrogen monitor shall be demonstrated OPERABLE by the performance of a CHANNEL CHECK at least once per 12 hours, an ANALOG CHANNEL OPERATIONAL TEST at least once per 31 days, and at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION using sample gas containing:

a. One volume percent hydrogen, balance nitrogen, and

b. Four volume percent hydrogen, balance nitrogen.

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ELECTRIC HYDROGEN RECOMBINERS

LIMITING CONDITION FOR OPERATION

3.6.4.2 Two independent Hydrogen Recombiner Systems 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 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 verifying during a Recombiner System functional test that the minimum heater sheath temperature increases to greater than or equal to 700°F within 90 minutes. Upon reaching 700°F, increase the power setting to maximum power for 2 minutes and verify that the power meter reads greater than or equal to 60 kW; and

b. At least once per 18 months by:

   1) Performing a CHANNEL CALIBRATION of all recombiner instrumentation and control circuits,

   2) Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiners enclosure (i.e., loose wiring or structural connections, deposits of foreign materials, etc.), and

   3) Verifying the integrity of all heater electrical circuits by performing a resistance to ground test following the above required functional test. The resistance to ground for any heater phase shall be greater than or equal to 10,000 ohms.

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HYDROGEN MITIGATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.4.3 Both trains of the Primary Containment Hydrogen Mitigation System shall be operable.

APPLICABILITY: MODES 1 and 2.

ACTION

With one train of the Hydrogen Mitigation System inoperable, restore the inoperable train to OPERABLE status within 7 days or increase the surveillance interval of Specification 4.6.4.3a. from 92 days to 7 days on the OPERABLE train until the inoperable train is returned to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.6.4.3 Each train of the Hydrogen Mitigation System shall be demonstrated OPERABLE:

a. At least once per 92 days by energizing the supply breakers and verifying that at least 33 of 34 ignitors in each train are energized,* and

b. At least once per 18 months by verifying the temperature of each ignitor is a minimum of 1700°F.

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*Inoperable ignitors must not be on corresponding redundant circuits which provide coverage for the same region.

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CONTAINMENT SYSTEMS

3/4.6.5 ICE CONDENSER

ICE BED

LIMITING CONDITION FOR OPERATION

3.6.5.1 The ice bed shall be OPERABLE with:

a. The stored ice having a boron concentration of at least 1800 ppm boron as sodium tetraborate and a pH of 9.0 to 9.5,

b. Flow channels through the ice condenser,

c. A maximum ice bed temperature of less than or equal to 27°F,

d. A total ice weight of at least 2,719,500 pounds at a 95% level of confidence, and

e. 1944 ice baskets.

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

ACTION:

With the ice bed inoperable, restore the ice bed to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.1 The ice condenser shall be determined OPERABLE:

a. At least once per 12 hours by using the Ice Bed Temperature Monitoring System to verify that the maximum ice bed temperature is less than or equal to 27°F,

b. At least once per 9 months by:

1) Chemical analyses which verify that at least nine representative samples of stored ice have a boron concentration of at least 1800 ppm as sodium tetraborate and a pH of 9.0 to 9.5 at 20°C;

2) Weighing a representative sample of at least 144 ice baskets and verifying that each basket contains at least 1399 lbs of ice. The representative sample shall include six baskets from each of the 24 ice condenser bays and shall be constituted of

one basket each from Radial Rows 1, 2, 4, 6, 8, and 9 (or from the same row of an adjacent bay if a basket from a designated row cannot be obtained for weighing) within each bay. If any basket is found to contain less than 1399 pounds of ice, a representative sample of 20 additional baskets from the same bay shall be weighed. The minimum average weight of ice from the 20 additional baskets and the discrepant basket shall not be less than 1399 pounds/basket at a 95% level of confidence.

The ice condenser shall also be subdivided into 3 groups of baskets, as follows: Group 1 - Bays 1 through 8, Group 2 - Bays 9 through 16, and Group 3 - Bays 17 through 24. The minimum average ice weight of the sample baskets from Radial Rows 1, 2, 4, 6, 8, and 9 in each group shall not be less than 1399 pounds/basket at a 95% level of confidence.

The minimum total ice condenser ice weight at a 95% level of confidence shall be calculated using all ice basket weights determined during this weighing program and shall not be less than 2,719,500 pounds; and

3) Verifying, by a visual inspection of at least two flow passages per ice condenser bay, that the accumulation of frost or ice on flow passages between ice baskets, past lattice frames, through the intermediate and top deck floor grating, or past the lower inlet plenum support structures and turning vanes is restricted to a thickness of less than or equal to 0.38 inch. If one flow passage per bay is found to have an accumulation of frost or ice with a thickness of greater than 0.38 inch, a representative sample of 20 additional flow passages from the same bay shall be visually inspected. If these additional flow passages are found acceptable, the surveillance program may proceed considering the single deficiency as unique and acceptable. More than one restricted flow passage per bay is evidence of abnormal degradation of the ice condenser.

c. At least once per 40 months by lifting and visually inspecting the accessible portions of at least two ice baskets from each one-third of the ice condenser and verifying that the ice baskets are free of detrimental structural wear, cracks, corrosion or other damage. The ice baskets shall be raised at least 10 feet for this inspection.

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ICE BED TEMPERATURE MONITORING SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.5.2 The Ice Bed Temperature Monitoring System shall be OPERABLE with at least two OPERABLE RTD channels in the ice bed at each of three basic elevations: 10'6", 30'9" and 55' above the floor of the ice condenser, for each one-third of the ice condenser.

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

ACTION:

a. With the ice bed temperature not available in the main control room, determine the ice bed temperature at the local ice condenser temperature monitoring panel (local panel) every 12 hours.

b. With the Ice Bed Temperature Monitoring System inoperable and being unable to determine the ice bed temperature at the local panel, POWER OPERATION may continue for up to 30 days provided:

   1. The ice compartment lower inlet doors, intermediate deck doors, and top deck doors are closed;
   2. The last recorded mean ice bed temperature was less than or equal to 20°F and steady; and
   3. The Ice Condenser Cooling System is OPERABLE with at least:
      a) Twenty-one OPERABLE air handling units,
      b) Two OPERABLE glycol circulating pumps, and
      c) Three OPERABLE refrigerant units.

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

c. With the Ice Bed Temperature Monitoring System inoperable and being unable to determine the ice bed temperature at the local panel and with the Ice Condenser Cooling System not satisfying the minimum components OPERABILITY requirements of ACTION b.3. above, POWER OPERATION may continue for up to 6 days provided the ice compartment lower inlet doors, intermediate deck doors, and top deck doors are closed and the last recorded mean ice bed temperature was less than or equal to 15°F and steady; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.2 The Ice Bed Temperature Monitoring System shall be determined OPERABLE by performance of a CHANNEL CHECK at least once per 12 hours.

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ICE CONDENSER DOORS

LIMITING CONDITION FOR OPERATION

3.6.5.3 The ice condenser inlet doors, intermediate deck doors, and top deck doors shall be closed and OPERABLE.

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

ACTION:

a. With one or more ice condensers inlet doors inoperable due to being physically restrained from opening, restore all inlet doors to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one or more ice condenser doors open or otherwise inoperable, POWER OPERATION may continue for up to 14 days provided the ice bed temperature is monitored at least once per 4 hours and the maximum ice bed temperature is maintained less than or equal to 27°F; otherwise, restore the doors to their closed positions or OPERABLE status (as applicable) within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.3.1 Inlet Doors - Ice condenser inlet doors shall be:

a. Continuously monitored and determined closed by the inlet door position monitoring system, and

b. Demonstrated OPERABLE at least once per 3 months during the first year after the ice bed is initially fully-loaded and at least once per 9 months thereafter by:

1) Verifying that the torque required to initially open each door is less than or equal to 675 inch pounds;

2) Verifying that opening of each door is not impaired by ice, frost or debris;

3) Testing a sample of at least 50% of the doors and verifying that the torque required to open each door is less than 195 inch-pounds when the door is 40 degrees open. This torque is defined as the "door opening torque" and is equal to the nominal door torque plus a frictional torque component. The doors selected for determination of the "door opening torque" shall be selected to ensure that all doors are tested at least once during two test intervals;

4) Testing a sample of at least 50% of the doors and verifying that the torque required to keep each door from closing is greater than 78 inch-pounds when the door is 40 degrees open. This torque is defined as the "door closing torque" and is equal to the nominal door torque minus a frictional torque component. The doors selected for determination of the "door closing torque" shall be selected to ensure that all doors are tested at least once during two test intervals; and

5) Calculation of the frictional torque of each door tested in accordance with Specifications 4.6.5.3.1b.3) and 4) above. The calculated frictional torque shall be less than or equal to 40 inch-pounds.

4.6.5.3.2 Intermediate Deck Doors - Each ice condenser intermediate deck door shall be:

a. Verified closed and free of frost accumulation by a visual inspection at least once per 7 days, and

b. Demonstrated OPERABLE at least once per 3 months during the first year after the ice bed is initially fully-loaded and at least once per 18 months thereafter by visually verifying no structural deterioration, by verifying free movement of the vent assemblies, and by ascertaining free movement when lifted with the applicable force shown below:

	Door	Lifting Force
1)	0-1, 0-5	F 37.4 lbs.
2)	0-2, 0-6	F 33.8 lbs.
3)	0-3, 0-7	F 31.8 lbs.
4)	0-4, 0-8	F 31.0 lbs.

4.6.5.3.3 Top Deck Doors - Each ice condenser top deck door shall be determined closed and OPERABLE at least once per 92 days by visually verifying:

a. That the doors are in place, and

b. That no condensation, frost, or ice has formed on the doors or blankets which would restrict their lifting and opening if required.

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INLET DOOR POSITION MONITORING SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.5.4 The Inlet Door Position Monitoring System shall be OPERABLE.

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

ACTION:

With the Inlet Door Position Monitoring System inoperable, POWER OPERATION may continue for up to 14 days, provided the Ice Bed Temperature Monitoring System is OPERABLE and the maximum ice bed temperature is less than or equal to 27°F when monitored at least once per 4 hours; otherwise, restore the Inlet Door Position Monitoring System to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.4 The Inlet Door Position Monitoring System shall be determined OPERABLE by:

a. Performing a CHANNEL CHECK at least once per 12 hours,

b. Performing a TRIP ACTUATING DEVICE OPERATIONAL TEST at least once per 18 months, and

c. Verifying that the monitoring system correctly indicates the status of each inlet door as the door is opened and reclosed during its testing per Specification 4.6.5.3.1.

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CONTAINMENT SYSTEMS

DIVIDER BARRIER PERSONNEL ACCESS DOORS AND EQUIPMENT HATCHES

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LIMITING CONDITION FOR OPERATION

3.6.5.5 The personnel access doors and equipment hatches between the containment's upper and lower compartments shall be OPERABLE and closed.

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

ACTION:

With a personnel access door or equipment hatch inoperable or open except for personnel transit entry, restore the door or hatch to OPERABLE status or to its closed position (as applicable) within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.5.1 The personnel access doors and equipment hatches between the containment's upper and lower compartments shall be determined closed by a visual inspection prior to increasing the Reactor Coolant System T_{avg} above 200°F and after each personnel transit entry when the Reactor Coolant System T_{avg} is above 200°F.

4.6.5.5.2 The personnel access doors and equipment hatches between the containment's upper and lower compartments shall be determined OPERABLE by visually inspecting the seals and sealing surfaces of these penetrations and verifying no detrimental misalignments, cracks or defects in the sealing surfaces, or apparent deterioration of the seal material:

a. Prior to final closure of the penetration each time it has been opened, and

b. At least once per 10 years for penetrations containing seals fabricated from resilient materials.

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CONTAINMENT AIR RETURN FAN SYSTEMS

LIMITING CONDITION FOR OPERATION

3.6.5.6 Two independent Containment Air Return Fan Systems shall be OPERABLE.

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

ACTION:

With one Containment Air Return Fan System inoperable, restore the inoperable system 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

4.6.5.6 Each Containment Air Return Fan System shall be demonstrated OPERABLE:

a. At least once per 92 days on a STAGGERED TEST BASIS by:

   1) Verifying that the fan motor current is 74 ± 20 amps with the backdraft dampers closed, and

   2) Verifying that with the fan off, the air return fan damper opens when a torque of less than or equal to 150 inch-pounds is applied to the counterweight.

b. At least once per 18 months by verifying that the air return fan starts on Containment Pressure High-High test signal after a 10 ± 1 minute delay and operates for at least 15 minutes.

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FLOOR DRAINS

LIMITING CONDITION FOR OPERATION

3.6.5.7 The ice condenser floor drains shall be OPERABLE.

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

ACTION:

With the ice condenser floor drain inoperable, restore the floor drain to OPERABLE status prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.5.7 Each ice condenser floor drain shall be demonstrated OPERABLE at least once per 18 months during shutdown by:

a. Verifying that the valve gate opening is not impaired by ice, frost, or debris,

b. Verifying that the valve seat is not damaged,

c. Verifying that the valve gate opens when a force of less than or equal to 100 lbs is applied, and

d. Verifying that the drain line from the ice condenser floor to the containment lower compartment is unrestricted.

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REFUELING CANAL DRAINS

LIMITING CONDITION FOR OPERATION

3.6.5.8 The refueling canal drains shall be OPERABLE.

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

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.6.5.8 Each refueling canal drain shall be demonstrated OPERABLE:

a. Prior to increasing the Reactor Coolant System temperature above 200°F after each partial or complete filling of the canal with water by verifying that the plug is removed from the drain line and that the drain is not obstructed by debris, and

b. At least once per 92 days by verifying, through a visual inspection, that the plug is removed and there is no debris that could obstruct the drain.

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LIMITING CONDITION FOR OPERATION

3.6.5.9 The divider barrier seal shall be OPERABLE.

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

ACTION:

With the divider barrier seal inoperable, restore the seal to OPERABLE status prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.5.9 The divider barrier seal shall be determined OPERABLE at least once per 18 months during shutdown by:

a. Removing and pressure testing the divider barrier seal test coupons in accordance with Table 3.6-3, and

b. Visually inspecting at least 95 % of the seal's entire length and:

   1) Verifying that the seal and seal mounting bolts are properly installed, and

   2) Verifying that the seal material shows no visual evidence of deterioration due to holes, ruptures, chemical attack, abrasion, radiation damage, or changes in physical appearances.

TABLE 3.6-3

DIVIDER BARRIER SEAL
ACCEPTABLE PHYSICAL PROPERTIES

Material	Differential Pressure	Elongation
Presray Corp. EPDM Compound E603 (2 ply dacron coated EPDM)	15 psid after LOCA environment simulation*	N.A.

*The test sequence will be as follows: 2 coupons will be tested to 60 psig; with no failures, the results are acceptable. If a failure occurs at 60 psid, 4 coupons will be tested to 30 psid; with no failures, the results are acceptable. If a failure occurs at 30 psid, 5 coupons will be sent to the manufacturer for LOCA environment simulation (radiation, humidity, temperature) and testing to 15 psid.

3/4.7.11 FIRE SUPPRESSION SYSTEMS

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FIRE SUPPRESSION WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.11.1 The Fire Suppression Water System shall be OPERABLE with:

a. At least three fire suppression pumps, each with a capacity of 1590 gpm at 300 feet of head, with their discharge aligned to the fire suppression header, and

b. An OPERABLE flow path capable of taking suction from the forebay and transferring the water through distribution piping with OPERABLE sectionalizing control or isolation valves to the yard hydrant curb valves, the standpipe hose valves, and the first valve upstream of the water flow device on each Spray System required to be OPERABLE per Specifications 3.7.11.2 and 3.7.11.4.

APPLICABILITY: At all times.

ACTION:

a. With one pump inoperable, restore at least three pumps to OPERABLE status within 7 days or provide an alternate backup pump or supply. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

b. With the Fire Suppression Water System otherwise inoperable establish a backup Fire Suppression Water System within 24 hours.

SURVEILLANCE REQUIREMENTS

4.7.11.1 The Fire Suppression Water System shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by starting each pump and operating it for at least 15 minutes on recirculation flow,

b. At least once per 31 days by verifying that each testable valve (manual, power-operated, or automatic) in the flow path is in its correct position,

c. At least once per 6 months by performance of a system flush,

d. At least once per 12 months by cycling each non-self indicating testable valve in the flow path through at least one complete cycle of full travel,

e. At least once per 18 months by performing a system functional test which includes simulated automatic actuation of the system throughout its operating sequence, and:

1) Verifying that each automatic valve in the flow path actuates to its correct position,

2) Verifying that each pump develops at least 1590 gpm at a total pump head of 300 feet,

3) Cycling each non-self indicating valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel, and

4) Verifying that each fire suppression pump starts as designed to maintain the Fire Suppression Water System pressure at the pump discharge greater than or equal to 105 psig.

f. At least once per 3 years by performing a flow test of the system in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association.

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TABLE 3.7-3

FIRE HOSE STATIONS

LOCATION	ELEVATION	HOSE RACK #
Diesel Generator Building		
Corridor	742	0-26-1077
Air Exhaust 2B Room	760	0-26-1082
Entrance to 1A Elec. Bd. Rm.	760	0-26-1080
Reactor Building		
Reactor Coolant Pumps	702	1-26-1220
Reactor Coolant Pumps	702	1-26-1221
Reactor Coolant Pumps	702	1-26-1222
Reactor Coolant Pumps	702	1-26-1223
Reactor Coolant Pumps	702	1-26-1224
Reactor Coolant Pumps	702	1-26-1225
Standpipe R. Bldg. Annulus	Platform 702	1-26-1216
Standpipe R. Bldg. Annulus	Platform 702	1-26-1217
Standpipe R. Bldg. Annulus	Platform 702	1-26-1218
Standpipe R. Bldg. Annulus	Platform 702	1-26-1219
Standpipe R. Bldg. Annulus	Platform 724	1-26-1212
Standpipe R. Bldg. Annulus	Platform 724	1-26-1213
Standpipe R. Bldg. Annulus	Platform 724	1-26-1214
Standpipe R. Bldg. Annulus	Platform 724	1-26-1215
Standpipe R. Bldg. Annulus	Platform 744	1-26-1208
Standpipe R. Bldg. Annulus	Platform 744	1-26-1209
Standpipe R. Bldg. Annulus	Platform 744	1-26-1210
Standpipe R. Bldg. Annulus	Platform 744	1-26-1211
Standpipe R. Bldg. Annulus	Platform 763	1-26-1204
Standpipe R. Bldg. Annulus	Platform 763	1-26-1205
Standpipe R. Bldg. Annulus	Platform 763	1-26-1206
Standpipe R. Bldg. Annulus	Platform 763	1-26-1207
Standpipe R. Bldg. Annulus	Platform 782	1-26-1200
Standpipe R. Bldg. Annulus	Platform 782	1-26-1201
Standpipe R. Bldg. Annulus	Platform 782	1-26-1202
Standpipe R. Bldg. Annulus	Platform 782	1-26-1203
Standpipe R. Bldg. Annulus	Platform 801	1-26-1196
Standpipe R. Bldg. Annulus	Platform 801	1-26-1197
Standpipe R. Bldg. Annulus	Platform 801	1-26-1198
Standpipe R. Bldg. Annulus	Platform 801	1-26-1199
Auxiliary Building		
A9V	676	0-26-691
A8T	676	0-26-663
A3T	692	1-26-668
A13S	692	2-26-668
A7W	692	0-26-680
A8X	692	0-26-681
A8T	692	0-26-662

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TABLE 3.7-3 (Continued)

FIRE HOSE STATIONS

LOCATION	ELEVATION	HOSE RACK #
Auxiliary Building (Continued)		
A3T	713	1-26-667
A13T	713	2-26-667
A8W	713	0-26-690
A8T	713	0-26-661
A1V	716	ABH-5, valves 1-26-674 and 1-26-675
A8X	729	0-26-658
A8X	729	0-26-659
A5X	729	1-26-686
A11X	729	2-26-686
A11Y	730	0-26-854
A3T	737	1-26-666
A8W	737	0-26-677
A8T	737	0-26-660
A13T	737	2-26-666
A11Y	750	0-26-855
A3T	757	1-26-665
A13T	757	2-26-665
A4U	757	1-26-670
A12V	757	2-26-670
A5X	757	0-26-682
A10T	757	0-26-684
A5U	757	ABH-3, valves 1-26-671 and 1-26-672
A5X	763	1-26-693
A11X	763.5	2-26-696
A3T	772	1-26-664
A13T	772	2-26-664
A5X	775	1-26-694
A4U	782	1-26-669
A5X	786.5	1-26-695
Control Building		
Stairwell C-1	692	0-26-1194
Stairwell C-1	708	0-26-1193
Stairwell C-1	729	0-26-1192
Stairwell C-1	755	0-26-1191
Stairwell C-2	692	0-26-1189
Stairwell C-2	708	0-26-1188
Stairwell C-2	729	0-26-1187
Stairwell C-2	755	0-26-1186

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TABLE 3.7-3 (Continued)

FIRE HOSE STATIONS

LOCATION	ELEVATION	HOSE RACK #
Intake Pumping Station (ERCW)		
Electrical Board Rm.	716	0-26-595
Electrical Board Rm.	716	0-26-596
B Strainer Room	727	0-26-594
A Strainer Room	727	0-26-597
A Fire Pump Room	727	0-26-1710
B Fire Pump Room	727	0-26-1711

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3/4.7.12 FIRE RATED ASSEMBLIES

LIMITING CONDITION FOR OPERATION

3.7.12 All fire rated assemblies (walls, floor/ceilings, cable tray enclosures and other fire barriers) separating safety-related fire areas or separating portions of redundant systems important to safe shutdown within a fire area and all sealing devices in fire rated assembly penetrations (fire doors, fire windows, fire dampers, cable, piping, and ventilation duct penetration seals) shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

a. With one or more of the above required fire rated assemblies and/or sealing devices inoperable, within 1 hour either establish a continuous fire watch on at least one side of the affected assembly, or verify the OPERABILITY of fire detectors on at least one side of the inoperable assembly and establish an hourly fire watch patrol.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.12.1 At least once per 18 months the above required fire rated assemblies and penetration sealing devices shall be verified OPERABLE by performing a visual inspection of:

a. The exposed surfaces of each fire rated assembly,

b. Each fire window/fire damper/and associated hardware, and

c. At least 10% of each type of sealed penetration. If apparent changes in appearance or abnormal degradations are found, a visual inspection of an additional 10% of each type of sealed penetration shall be made. This inspection process shall continue until a 10% sample with no apparent changes in appearance or abnormal degradation is found. Samples shall be selected such that each penetration seal will be inspected every 15 years.

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4.7.12.2 Each of the above required fire doors shall be verified OPERABLE by inspecting the automatic hold-open, release and closing mechanism and latches at least once per 6 months, and by verifying:

a. That each locked closed fire door is closed at least once per 7 days,

b. That doors with automatic hold-open and release mechanisms are free of obstructions at least once per 24 hours and a functional test is performed at least once per 18 months, and

c. That each unlocked fire door without electrical supervision is closed at least once per 24 hours.

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LIMITING CONDITION FOR OPERATION

3.7.13 The temperature limit of each area given in Table 3.7-4 shall not be exceeded for more than 8 hours or by more than 30°F.

APPLICABILITY: Whenever the affected equipment in an affected area is required to be OPERABLE.

ACTION:

a. With one or more areas exceeding the temperature limit(s) given in Table 3.7-4 for more than 8 hours, prepare and submit a Special Report to the Commission within 30 days, pursuant to Specification 6.9.2, that provides a record of the cumulative time and the amount by which the temperature in the affected area(s) exceeded the limit(s) and an analysis to demonstrate the continued OPERABILITY of the affected equipment.

b. With one or more areas exceeding the temperature limit(s) given in Table 3.7-4 by more than 30°F, prepare and submit a Special Report as required by ACTION a. above and within 4 hours either restore the area(s) to within the temperature limit(s) or declare the affected equipment in the affected area(s) inoperable.

SURVEILLANCE REQUIREMENTS

4.7.13 The temperature in each of the areas given in Table 3.7-4 shall be determined to be within its limit at least once per 12 hours.

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TABLE 3.7-4

AREA TEMPERATURE MONITORING

	AREA	TEMPERATURE LIMIT (°F)
1.	Aux Bldg el 772 next to 480V Sd Bd transformer 1A2-A.	≤ 104
2.	Aux Bldg el 772 next to 480V Sd Bd transformer 1B1-B.	≤ 104
3.	Aux Bldg el 772 next to 480V Rx MOV Bd 1A2-A.	≤ 104
4.	Aux Bldg el 772 across from spare 125V vital battery charger 1-S.	≤ 104
5.	Aux Bldg el 772 next to 480V Rx MOV Bd 2A2-A.	≤ 104
6.	Aux Bldg el 772 next to 480V Sd Bd transformer 2A2-A.	≤ 104
7.	Aux Bldg el 772 next to 480V Sd Bd transformer 2B2-B.	≤ 104
8.	Aux Bldg el 772 next to 480V Rx MOV Bd 2B2-B.	≤ 104
9.	Aux Bldg el 772 U1 Mech Equip Room B.	≤ 104
10.	Sd Bd room el 757 U1 behind stairs S-A3.	≤ 104
11.	Sd Bd room el 757 U2 behind stairs S-A13.	≤ 104
12.	Refueling floor el 757 U1 beside Aux boration makeup tk.	≤ 104
13.	Aux Bldg el 737 U1 outside supply fan room.	≤ 104
14.	Aux Bldg el 713 U1 across from AFW pumps.	≤ 104
15.	Aux Bldg el 692 U1 outside AFW pump room door.	≤ 104
16.	Aux Bldg el 692 U2 near boric acid concentrate filter vault.	≤ 104
17.	Aux Bldg el 676 next to 0-L-629.	≤ 104
18.	Add Equip Bldg U1 el 729 between UHI accumulators.	≥ 70 ≤ 92
19.	Main Control Room south wall.	≤ 104
20.	Main Control Room across from 1-M-9.	≤ 104
21.	D/G Bldg el 742 2B-B D/G room on wall by battery charger.	≤ 120
22.	D/G Bldg el 760.5 next to 480V diesel Aux Bd 2B1-B.	≤ 120
23.	IPS el 741 next to 1A-A ERCW-MCC transformer and board.	≤ 120
24.	IPS el 741 in B train ERCW pump room.	≤ 120
25.	IPS el 741 next to 2A-A ERCW-MCC transformer and board.	≤ 120
26.	Computer room el 708 center of room.	≥ 65 ≤ 75
27.	North steam valve vault room U1 Morgan Temp Recorder.	≥ 80
28.	South steam valve vault room U1 Morgan Temp Recorder.	≥ 80
29.	D/G Bldg el 742 1A-A D/G Room near D/G set	≥ 65
30.	D/G Bldg el 742 1B-B D/G Room near D/G set	≥ 65
31.	D/G Bldg el 742 2A-A D/G Room near D/G set	≥ 65
32.	D/G Bldg el 742 2B-B D/G Room near D/G set	≥ 65

ACTION (Continued)

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1. All required systems, subsystems, trains, components and devices that depend on the remaining OPERABLE diesel generator sets as a source of emergency power are also OPERABLE, and

2. When in MODE 1, 2, or 3, the steam-driven auxiliary feedwater pump is OPERABLE.

If these conditions are not satisfied within 2 hours, be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.

d. With two of the above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of four diesel generator sets by performing Specification 4.8.1.1.2a.4) within 1 hour and at least once per 8 hours thereafter, unless the diesel generator sets are already operating; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, restore at least two offsite circuits to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

e. With two or more diesel generator sets inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Specification 4.8.1.1.1a. within 1 hour and at least once per 8 hours thereafter; restore at least Diesel Generator Sets 1A-A and 2A-A or 1B-B and 2B-B to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least four diesel generator sets to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E Distribution System shall be:

a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availability, and

b. Demonstrated OPERABLE at least once per 18 months during shutdown by:

1) Transferring (manually and automatically) power supply from the normal circuit to the first alternate circuit to the second alternate circuit, and

2) Verifying automatic transfer of circuits between first and second alternate circuits is prevented with a simulated faulted or overloaded bus.

4.8.1.1.2 Each diesel generator set 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 engine-mounted fuel tank,

these limits during this test. Within 5 minutes after completing this 24-hour test, perform Specification 4.8.1.1.2f.6)b);*

8) Verifying that the auto-connected loads to each diesel generator do not exceed the 2000-hour rating of 4840 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) Be restored to its standby status.

10) Verifying that the automatic load sequence timers are OPERABLE with the interval between each load block within ± 10% of its design interval.

11) Verifying that the following diesel generator lockout features prevent diesel generator starting:

   a) Engine overspeed, or

   b) 86 GA lockout relay, or

   c) Emergency stop.

12) Performing a visual inspection for leaks in the exposed fuel oil piping while the diesel generator is running.

g. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting all diesel generators simultaneously, during shutdown, and verifying that all diesel generators accelerate to 900 ± 18 rpm in less than or equal to 10 seconds; and

*If Specification 4.8.1.1.2f.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 4400 kW for 1 hour or until operating temperature has stabilized.

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h. At least once per 10 years by draining each 7-day fuel storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution.

4.8.1.1.3 The 125-volt D.C. distribution panel, 125-volt D.C. battery bank and associated charger for each diesel generator shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying:

   1) Correct breaker alignment, indicated power availability and voltage on the distribution panels greater than or equal to 118 volts,

   2) That each battery bank and charger meet the Category A limits in Table 4.8-2 of Specification 4.8.2.1, and

   3) That the total battery terminal voltage is greater than or equal to 126 volts on float charge.

b. At least once per 92 days and within 7 days after a battery discharge with a battery terminal voltage below 105 volts or a battery overcharge with a battery terminal voltage above 136 volts by:

   1) Verifying that the parameters in Table 4.8-2 of Specification 4.8.2.1 meet the Category B limits,

   2) Verifying there is no visible corrosion at either terminals or connectors, or the cell to terminal connection resistance of these items is less than 150×10^{-6} ohm, and

   3) Verifying that 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 battery to battery and terminal connections are clean, tight and coated with anticorrosion material, and

3) The resistance of each cell to terminal connection is less than or equal to 150 x 10^{-6} ohm.

d. At least once per 18 months 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 by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance test.

f. At least once per 18 months by giving performance discharge tests of battery capacity 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.

4.8.1.1.4 Reports - All diesel generator failures, valid or non-valid, shall be reported in a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days. Report 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.

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 143 volts, by verifying that:

1) The parameters in Table 4.8-2 meet the Category B limits,

2) There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150×10^{-6} ohm, and

3) The average electrolyte temperature of 12 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 150×10^{-6} ohm, and

4) The battery charger will supply at least 200 amperes at 125 volts for at least 8 hours.

d. At least once per 18 months 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. Once per 60 month interval this performance discharge test may be performed in lieu of the battery service test required by Specification 4.8.2.1d.; and

f. At least once per 18 months during shutdown, by giving performance discharge tests of battery capacity 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.

c) For each circuit breaker found inoperable during these functional tests, an additional circuit breaker of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.

2) By selecting and functionally testing a representative sample of at least 10% of each type of electrically-operated circuit breakers. Electrically-operated circuit breakers selected for functional testing shall be selected on a rotating basis. The functional test shall consist of injecting a current input at the specified Setpoint to each selected electrically-operated circuit breaker or trip device and verifying that each electrically-operated circuit breaker or trip device functions as designed. Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each device found inoperable during these functional tests, an additional representative sample of at least 10% of the defective type electrically-operated circuit breakers shall also be functionally tested until no more failures are found or all electrically-operated circuit breakers of that type have been functionally tested; and

b. At least once per 60 months by subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.

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TABLE 3.8-2

MOTOR-OPERATED VALVES THERMAL OVERLOAD DEVICES WHICH ARE BYPASSED UNDER ACCIDENT CONDITIONS

VALVE NO.	FUNCTION	BYPASS DEVICE
1-FCV-62-63	Isolation for Seal Water Filter	Yes
1-FCV-62-138	Safe Shutdown Redundancy (CVCS)	Yes
1-FCV-62-98	ECCS Operation	Yes
1-FCV-62-99	ECCS Operation	Yes
1-FCV-62-90	ECCS Operation	Yes
1-FCV-62-91	ECCS Operation	Yes
1-FCV-62-61	Cont. Isolation	Yes
1-LCV-62-132	ECCS Operation	Yes
1-LCV-62-133	ECCS Operation	Yes
1-LCV-62-135	ECCS Operation	Yes
1-LCV-62-136	ECCS Operation	Yes
1-FCV-74-1	Open for Normal Plant Cooldown	Yes
1-FCV-74-2	Open for Normal Plant Cooldown	Yes
1-FCV-74-3	ECCS Operation	Yes
1-FCV-74-21	ECCS Operation	Yes
1-FCV-74-12	RHR Pump, Mini-flow Protects Pump	Yes
1-FCV-74-24	RHR Pump, Mini-flow Protects Pump	Yes
1-FCV-74-33	ECCS Operation	Yes
1-FCV-74-35	ECCS Operation	Yes
1-FCV-63-7	ECCS Operation	Yes
1-FCV-63-6	ECCS Operation	Yes
1-FCV-63-156	ECCS Flow Path	Yes
1-FCV-63-157	ECCS Flow Path	Yes
1-FCV-63-39	BIT Injection	Yes
1-FCV-63-40	BIT Injection	Yes
1-FCV-63-25	BIT Injection	Yes
1-FCV-63-26	BIT Injection	Yes
1-FCV-63-118	RCS Pressure Boundary	Yes
1-FCV-63-98	RCS Pressure Boundary	Yes
1-FCV-63-80	RCS Pressure Boundary	Yes
1-FCV-63-67	RCS Pressure Boundary	Yes
1-FCV-63-1	ECCS Operation	Yes
1-FCV-63-72	ECCS Flow Path from Cont. Sump	Yes
1-FCV-63-73	ECCS Flow Path from Cont. Sump	Yes
1-FCV-63-8	ECCS Flow Path	Yes
1-FCV-63-11	ECCS Flow Path	Yes
1-FCV-63-93	ECCS Cooldown Flow Path	Yes
1-FCV-63-94	ECCS Cooldown Flow Path	Yes
1-FCV-63-172	ECCS Flow Path	Yes
1-FCV-63-5	ECCS Flow Path	Yes
1-FCV-63-47	Train Isolation	Yes
1-FCV-63-48	Train Isolation	Yes
1-FCV-63-4	SI Pump Mini-flow	Yes
1-FCV-63-175	SI Pump Mini-flow	Yes

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TABLE 3.8-2 (Continued)

MOTOR-OPERATED VALVES THERMAL OVERLOAD DEVICES WHICH ARE BYPASSED UNDER ACCIDENT CONDITIONS

VALVE NO.	FUNCTION	BYPASS DEVICE
1-FCV-63-177	SIS Pump Inlet to CVCS	Yes
1-FCV-63-3	SI Pump Mini-Flow	Yes
1-FCV-63-152	ECCS Recirc	Yes
1-FCV-63-153	ECCS Recirc	Yes
1-FCV-63-22	ECCS Recirc	Yes
1-FCV-3-33	Quick Closing Isolation	Yes
1-FCV-3-47	Quick Closing Isolation	Yes
1-FCV-3-87	Quick Closing Isolation	Yes
1-FCV-3-100	Quick Closing Isolation	Yes
1-FCV-1-15	Stm Supply to Aux FWP turbine	Yes
1-FCV-1-16	Stm Supply to Aux FWP turbine	Yes
1-FCV-3-179A	ERCW Sys Supply to Pump	Yes
1-FCV-3-179B	ERCW Sys Sypply to Pump	Yes
1-FCV-3-136A	ERCW Sys Supply to Pump	Yes
1-FCV-3-136B	ERCW Sys Supply to Pump	Yes
1-FCV-3-116A	ERCW Sys Supply to Pump	Yes
1-FCV-3-116B	ERCW Sys Supply to Pump	Yes
1-FCV-3-126A	ERCW Sys Supply to Pump	Yes
1-FCV-3-126B	ERCW Sys Supply to Pump	Yes
1-FCV-70-133	Isolation for RCP Oil Coolers & Therm B	Yes
1-FCV-70-139	Isolation for RCP Oil Coolers & Therm B	Yes
1-FCV-70-4	Isolation for Non-Essential Loads	Yes
1-FCV-70-143	Isolation for Excess Letdown Ht Xchngr	Yes
1-FCV-70-92	Isolation for RCP Oil Coolers & Therm B	Yes
1-FCV-70-90	Isolation for RCP Oil Coolers & Therm B	Yes
1-FCV-70-87	Isolation for RCP Oil Coolers & Therm B	Yes
1-FCV-70-89	Isolation for RCP Oil Coolers & Therm B	Yes
1-FCV-70-140	Isolation for RCP Oil Coolers & Therm B	Yes
1-FCV-70-134	Isolation for RCP Oil Coolers & Therm B	Yes
1-FCV-67-67	DG Ht Ex	Yes
1-FCV-67-66	DG Ht Ex	Yes
1-FCV-67-123	CS Ht Ex Supply	Yes
1-FCV-67-125	CS Ht Ex Supply	Yes
1-FCV-67-124	CS Ht Ex Discharge	Yes
1-FCV-67-126	CS Ht Ex Discharge	Yes
0-FCV-67-151	CCWS Ht Ex Throttling	Yes
1-FCV-67-146	CCWS Ht Ex Throttling	Yes
1-FCV-67-223	Isolation of 1B/2A HDR's	Yes
1-FCV-67-83	Cont. Isol. Lower	Yes
1-FCV-67-88	Cont. Isol. Lower	Yes
1-FCV-67-87	Cont. Isol. Lower	Yes
1-FCV-1-51	AFPT Trip and Throttle Valve	Yes
1-FCV-67-68	DG Ht Ex	Yes
1-FCV-67-65	DG Ht Ex	Yes

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TABLE 3.8-2 (Continued)

MOTOR-OPERATED VALVES THERMAL OVERLOAD DEVICES WHICH ARE BYPASSED UNDER ACCIDENT CONDITIONS

VALVE NO.	FUNCTION	BYPASS DEVICE
1-FCV-67-95	Cont. Isol. Lower	Yes
1-FCV-67-96	Cont. Isol. Lower	Yes
1-FCV-67-91	Cont. Isol. Lower	Yes
1-FCV-67-103	Cont. Isol. Lower	Yes
1-FCV-67-104	Cont. Isol. Lower	Yes
1-FCV-67-99	Cont. Isol. Lower	Yes
1-FCV-67-111	Cont. Isol. Lower	Yes
1-FCV-67-112	Cont. Isol. Lower	Yes
1-FCV-67-107	Cont. Isol. Lower	Yes
1-FCV-67-130	Cont. Isol. Upper	Yes
1-FCV-67-131	Cont. Isol. Upper	Yes
1-FCV-67-295	Cont. Isol. Upper	Yes
1-FCV-67-134	Cont. Isol. Upper	Yes
1-FCV-67-296	Cont. Isol. Upper	Yes
1-FCV-67-133	Cont. Isol. Upper	Yes
1-FCV-67-139	Cont. Isol. Upper	Yes
1-FCV-67-297	Cont. Isol. Upper	Yes
1-FCV-67-138	Cont. Isol. Upper	Yes
1-FCV-67-142	Cont. Isol. Upper	Yes
1-FCV-67-298	Cont. Isol. Upper	Yes
1-FCV-67-141	Cont. Isol. Upper	Yes
1-FCV-72-21	Cont. Spray Pump Suction	Yes
1-FCV-72-22	Cont. Spray Pump Suction	Yes
1-FCV-72-2	Cont. Spray Isol.	Yes
1-FCV-72-39	Cont. Spray Isol.	Yes
1-FCV-72-40	RHR Cont. Spray Isol.	Yes
1-FCV-72-41	RHR Cont. Spray Isol.	Yes
1-FCV-72-44	Cont. Sump to Hdr A - Cont. Spray	Yes
1-FCV-72-45	Cont. Sump to Hdr B - Cont. Spray	Yes
1-FCV-26-240	Cont. Isol.	Yes
1-FCV-26-241	Annulus Isol.	Yes
1-FCV-26-242	Annulus Isol.	Yes
1-FCV-26-243	RCP Cont. Spray Isol.	Yes
1-FCV-26-244	Annulus Isol.	Yes
1-FCV-26-245	Annulus Isol.	Yes
1-FCV-68-332	RCS PRZR Rel.	Yes
1-FCV-68-333	RCS PRZR Rel.	Yes
1-FCV-70-153	RHR Ht Ex B-B Outlet	Yes
1-FCV-70-156	RHR Ht Ex A-A Outlet	Yes
1-FCV-70-207	Cont. Demin. Waste Evap. Bldg. Supply	Yes

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TABLE 3.8-3

MOTOR OPERATED VALVES THERMAL OVERLOAD DEVICES WHICH ARE NOT BYPASSED UNDER ACCIDENT CONDITIONS

VALVE NO.	FUNCTION
2-FCV-67-66	DG Ht Ex
2-FCV-67-67	DG Ht Ex
0-FCV-67-152	CCWS Ht Ex Throttling
2-FCV-67-65	DG Ht Ex
2-FCV-67-68	DG Ht Ex

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3/4.9.5 COMMUNICATIONS

LIMITING CONDITION FOR OPERATION

3.9.5 Direct continuous communications shall be maintained between the control room and personnel at the refueling station.

APPLICABILITY: During CORE ALTERATIONS.

ACTION:

When direct continuous communications between the control room and personnel at the refueling station cannot be maintained, suspend all CORE ALTERATIONS.

SURVEILLANCE REQUIREMENTS

4.9.5 Direct communications between the control room and personnel at the refueling station shall be demonstrated within 1 hour prior to the start of and at least once per 12 hours during CORE ALTERATIONS.

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3/4.9.6 REFUELING MACHINE

LIMITING CONDITION FOR OPERATION

3.9.6 The refueling machine and auxiliary hoist shall be used for movement of drive rods or fuel assemblies and shall be OPERABLE with:

a. The refueling machine used for movement of fuel assemblies having:

1) A minimum capacity of 3150 pounds,

2) An electrical overload cutoff limit less than or equal to 2850 pounds, and

3) A mechanical overload cutoff limit less than or equal to 3400 pounds.

b. The auxiliary hoist used for latching and unlatching drive rods having:

1) A minimum capacity of 1200 pounds, and

2) A load indicator which shall be used to prevent lifting loads in excess of 1190 pounds.

APPLICABILITY: During movement of drive rods or fuel assemblies within the reactor vessel.

ACTION:

With the requirements for refueling machine and/or hoist OPERABILITY not satisfied, suspend use of any inoperable refueling machine and/or auxiliary hoist from operations involving the movement of drive rods and fuel assemblies within the reactor vessel.

SURVEILLANCE REQUIREMENTS

4.9.6.1 Each refueling machine used for movement of fuel assemblies within the reactor vessel shall be demonstrated OPERABLE within 100 hours prior to the start of such operations by performing a load test of at least 3150 pounds and demonstrating an automatic electrical load cutoff when the crane load exceeds 2850 pounds and an automatic mechanical load cutoff before the crane load exceeds 3400 pounds.

4.9.6.2 Each auxiliary hoist and associated load indicator used for movement of drive rods within the reactor vessel shall be demonstrated OPERABLE within 100 hours prior to the start of such operations by performing a load test of at least 1200 pounds.

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3/4.9.13 REACTOR BUILDING PURGE VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.13 The Reactor Building Purge Ventilation Systems shall be OPERABLE.

APPLICABILITY: During CORE ALTERATIONS or movement of irradiated fuel within the containment.

ACTION:

a. With one Reactor Building Purge Ventilation System inoperable, CORE ALTERATIONS or movement of irradiated fuel within the containment may proceed provided the OPERABLE Reactor Building Purge Ventilation System is capable of being powered from an OPERABLE emergency power source and is in operation and discharging through at least one train of HEPA filters and charcoal adsorbers.

b. With no Reactor Building Purge Ventilation System OPERABLE, suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel within the containment until at least one Reactor Building Purge Ventilation System is restored to OPERABLE status.

c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.13 The above required Reactor Building Purge Ventilation Systems shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes;

b. At least once per 18 months, or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system, by:

   1) Verifying that the system satisfies the in-place penetration and bypass leakage acceptance criteria of less than 1% and uses the test procedure guidance 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 equal to 14,000 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, for a methyl iodide penetration of less than 10%; and

3) Verifying a system flow rate of 14,000 cfm ±10% during system operation when tested in accordance with ANSI N510-1975.

c. After every 720 hours of charcoal adsorber operation, by verifying within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 10%;

d. At least once per 18 months by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the system at a flow rate of 14,000 cfm ±10%; and

2) Verifying that on a High Radiation test signal, the system isolates.

e. After each complete or partial replacement of a HEPA filter bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1975 for a DOP test aerosol while operating the system at a flow rate of 14,000 cfm ±10%; and

f. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1975 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 14,000 cfm ±10%.

TABLE 4.11-2 (Continued)

TABLE NOTATIONS (Continued)

(3) Sampling and analysis shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15% of RATED THERMAL POWER within a 1-hour period unless (a) analysis shows that the DOSE EQUIVALENT I-131 concentration in the reactor coolant has not increased by more than a factor of 3, and (b) the lower containment noble gas activity monitor (RE-90-106 or RE-90-112) shows that the radioactivity has not increased by more than a factor of 3.

(4) Tritium grab samples shall be taken at least once per 24 hours when the refueling canal is flooded whenever irradiated fuel is in the spent fuel pool or reactor.

(5) Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.

(6) The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.

(7) Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing, or after removal from sampler. Sampling shall also be performed at least once per 24 hours for at least 7 days following each shutdown, startup, or THERMAL POWER change exceeding 15% of RATED THERMAL POWER within a 1-hour period and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLDs may be increased by a factor of 10. This requirement does not apply if: (1) analysis shows that the DOSE EQUIVALENT I-131 concentration in the reactor coolant has not increased by more than a factor of 3; and (2) the noble gas monitor shows that the radio activity has not increased by more than a factor of 3.

(8) During releases via this Exhaust System.

(9) In MODES 1, 2, 3, and 4, the upper and lower compartments of the containment shall be sampled prior to PURGING. Prior to breaking CONTAINMENT INTEGRITY in MODES 5 and 6, the upper and lower compartments of the containment shall be sampled. The incore instrument room purge sample shall be obtained at the shield building exhaust between 5 and 10 minutes following initiation of the incore instrument room purge.

(10) Prior to VENTING in MODES 1, 2, 3, and 4, the upper and lower compartments of the containment shall be sampled daily when VENTING is to occur on that day.

(11) Not applicable to the Shield Building Exhaust.

(12) Not applicable when the most recent Secondary Coolant System specific activity sample and analysis program gross radioactivity determination is less than or equal to 1×10^{-6} μCi/gm and the discharge Radiation Monitor Setpoint is less than or equal to 1×10^{-6} μCi/ml above background.

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EXPLOSIVE GAS MIXTURE

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of oxygen in the WASTE GAS HOLDUP SYSTEM shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.

APPLICABILITY: At all times.

ACTION:

a. With the concentration of oxygen in the WASTE GAS HOLDUP SYSTEM greater than 2% by volume but less than or equal to 4% by volume, reduce the oxygen concentration to the above limits within 48 hours.

b. With the concentration of oxygen in the WASTE GAS HOLDUP SYSTEM greater than 4% by volume and the hydrogen concentration greater than 4% by volume, immediately suspend all additions of waste gases to the system and reduce the concentration of oxygen to less than or equal to 4% by volume, then take ACTION a., above.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5 The concentration of hydrogen and oxygen in the WASTE GAS HOLDUP SYSTEM shall be determined to be within the above limits:

a. By continuously monitoring the waste gases in the WASTE GAS HOLDUP SYSTEM, while waste gases are being transferred, with the hydrogen and oxygen monitors required OPERABLE by Table 3.3-13 of Specification 3.3.3.10, or

b. If the hydrogen and/or oxygen monitors are inoperable, by grab samples as specified in Table 3.3-13 of Specification 3.3.3.10.

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MODERATOR TEMPERATURE COEFFICIENT (Continued)

The Surveillance Requirements for measurement of the MTC at the beginning and near the end of the fuel cycle are adequate to confirm that the MTC remains within its limits since this coefficient changes slowly due principally to the reduction in RCS boron concentration associated with fuel burnup.

3/4.1.1.4 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 551°F. This limitation is required to ensure: (1) the moderator temperature coefficient is within its analyzed temperature range, (2) the trip instrumentation is within its normal operating range, (3) the P-12 interlock is above its Setpoint, (4) the pressurizer is capable of being in an OPERABLE status with a steam bubble, and (5) the reactor vessel is above its minimum RT_{NDT} temperature.

3/4.1.2 BORATION SYSTEMS

The Boron Injection System ensures that negative reactivity control is available during each mode of facility operation. The components required to perform this function include: (1) borated water sources, (2) charging pumps, (3) separate flow paths, (4) boric acid transfer pumps, (5) associated heat tracing systems, and (6) an emergency power supply from OPERABLE diesel generators.

With the RCS average temperature above 350°F, a minimum of two boron injection flow paths are required to ensure single functional capability in the event an assumed failure renders one of the flow paths inoperable. The boration capability of either flow path is sufficient to provide a SHUTDOWN MARGIN from expected operating conditions of 1.6% $\Delta k/k$ after xenon decay and cooldown to 200°F. The maximum expected boration capability requirement occurs at EOL from full power equilibrium xenon conditions and requires 6542 gallons of 20,000-ppm borated water from the boric acid storage tanks or 75,000 gallons of 2000-ppm borated water from the refueling water storage tank.

With the RCS temperature below 350°F, one Boron Injection System is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity changes in the event the single Boron Injection System becomes inoperable.

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps except the required OPERABLE pump to be inoperable below 310°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV. TVA has elected to use a temperature of 350°F to coordinate charging pump OPERABILITY requirements with MODE change.

3/4.3.1 and 3/4.3.2 REACTOR TRIP SYSTEM and ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

The OPERABILITY of the Reactor Trip System and Engineered Safety Features Actuation System instrumentation and interlocks ensures that: (1) the associated ACTION and/or Reactor trip will be initiated when the parameter monitored by each channel or combination thereof reaches its Setpoint, (2) the specified coincidence logic is maintained, (3) sufficient redundancy is maintained to permit a channel to be out-of-service for testing or maintenance, and (4) sufficient system functional capability is available from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy, and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses. The Surveillance Requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability.

The measurement of response time at the specified frequencies provides assurance that the Reactor trip and the Engineered Safety Features actuation associated with each channel is completed within the time limit assumed in the accident analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable. Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either: (1) in place, onsite, or offsite test measurements, or (2) utilizing replacement sensors with certified response times.

The Engineered Safety Features Actuation System senses selected plant parameters and determines whether or not predetermined limits are being exceeded. If they are, the signals are combined into logic matrices sensitive to combinations indicative of various accidents, events, and transients. Once the required logic combination is completed, the system sends actuation signals to those Engineered Safety Features components whose aggregate function best serves the requirements of the condition. As an example, the following actions may be initiated by the Engineered Safety Features Actuation System to mitigate the consequences of a steam line break or loss-of-coolant accident: (1) Safety Injection pumps start and automatic valves position, (2) Reactor trip, (3) feedwater isolation, (4) startup of the emergency diesel generators, (5) Phase A containment isolation, (6) Turbine trip, (7) auxiliary feedwater pumps start, (8) containment air return fans start, (9) essential raw cooling water pumps start and automatic valves position, (10) Control Room Isolation And Ventilation Systems start, and (11) component cooling water pumps start.

Diesel generator start from degraded voltage relays is accomplished after 300 seconds if SI is not present and after 10 seconds if SI is present through the undervoltage relays.

3/4.6.1 PRIMARY CONTAINMENT

3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure, P_a. As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to 0.75 L_a during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates are consistent with the requirements of Appendix J of 10 CFR Part 50.

3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air lock seals provide assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.

3/4.6.1.4 INTERNAL PRESSURE

The limitations on containment internal pressure ensure that: (1) the containment structure is prevented from exceeding its design negative pressure differential of 2 psig with respect to the annulus atmosphere, and (2) the containment peak pressure does not exceed the design pressure of 15 psig during LOCA conditions.

The maximum peak pressure rise expected to be obtained from a LOCA event is 12 psig. The limit of 0.3 psig for initial positive containment pressure will limit the total pressure to 12.3 psig which is less than the design pressure and is consistent with the safety analyses.

same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

Two levels of surveillance are specified; visual inspections and functional testing. The visual inspections are designed to detect obvious indications of inoperability of the snubbers. Removal of insulation or contact with the snubbers is not required initially. However, suspected causes of inoperability are to be further investigated to establish OPERABILITY, or the snubber is to be declared inoperable, restored to OPERABLE condition, and all snubbers of that type and snubbers of other types subject to the same failure mode are to be inspected at a more frequent interval. Visual inspections may be limited to the accessible or inaccessible category in which the failure occurred. Functional testing to verify the OPERABILITY of snubbers is to be performed each refueling outage on sample lots of each type of snubber. Sampling plans are specified to provide a sufficient degree of confidence that the required level of OPERABILITY is present. Failure to meet the functional test acceptance criteria requires testing of additional snubbers and a failure analysis. The functional test requirements are to be met each refueling outage at approximately 18-month intervals.

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Operations Review Committee. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location etc.), and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to each safety-related system during an earthquake or severe transient. Therefore, the required inspection interval varies inversely with the observed snubber failures and is determined by the number of inoperable snubbers found during an inspection. In order to establish the inspection frequency for each type of snubber, it was assumed that the frequency of snubber failures and initiating events is constant with time and that the failure of any snubber could cause the system to be unprotected and to result in failure during an assumed initiating event. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

The acceptance criteria are to be used in the visual inspection to determine OPERABILITY of the snubbers. For example, if a fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be declared inoperable and shall not be determined OPERABLE via functional testing.

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6.7 SAFETY LIMIT VIOLATION

6.7.1 The following actions shall be taken in the event a Safety Limit is violated:

a. The NRC Operations Center shall be notified by telephone as soon as possible and in all cases within 1 hour. The Site Director, and the Chief, NSS, shall be notified within 24 hours;

b. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the PORC. This report shall describe: (1) applicable circumstances preceding the violation, (2) effects of the violation upon facility components, systems or structures, and (3) corrective action taken to prevent recurrence;

c. The Safety Limit Violation Report shall be submitted to the Commission, the Chief, NSS, and the Site Director within 14 days of the violation; and

d. Operation of the unit shall not be resumed until authorized by the Commission.

6.8 PROCEDURES AND PROGRAMS

6.8.1 Written procedures shall be established, implemented, and maintained covering the activities referenced below:

a. The applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978;

b. The applicable procedures required to implement the requirements of NUREG-0737 and supplements thereto;

c. Plant Physical Security Plan implementation;

d. Site Radiological Emergency Plan implementation;

e. PROCESS CONTROL PROGRAM implementation;

f. Quality Assurance Program for effluent monitoring; and

g. Fire Protection Program implementation

6.8.2 Each procedure of Specification 6.8.1 above, and changes thereto, shall be reviewed by the PORC and approved by the Plant Manager prior to implementation and reviewed periodically as set forth in administrative procedures.

Enclosure 2

Items Which May Result in Technical Specification Changes Based on Completion of SER Issues:

1) Administrative Section 6 to Technical Specification - LQB
2) Turbine Overspeed - PSB
3) Turbine Bypass Valve Testing - PSB
4) Diesel Generator Fuel Oil System Hydro - PSB
5) Ice Condenser Weight Analysis - CSB
6) Sequence Timers - PSB
7) D.G. Battery Chargers - PSB
8) Containment Purge and Vent Valves - EQB
9) Area Temperature Monitors D.G. Bldg. - PSB
10) Faulted or Overloaded Bus Testing - PSB
11) Vital Battery Charger - PSB
12) D.G. Battery Service Test - PSB

ENCLOSURE 3

Items Requiring Additional Information from TVA Before Finalized Technical Specifications can be Provided

1) Updated Figure 5.1-1

2) Complete Listing for Containment Isolation Valve Table 3.6-2

3) Submerged Equipment List for Equipment in Use During Normal Operation

4) Submerged Equipment List for Equipment with Power Locked Out During Normal Operation

5) Fuel Oil Sampling

6) First to Second Alternate Bus Transfer

7) T/S 4.5.2.h.1 - Charging Pump Flow

8) T/S 3.4.1.2 - Analysis to Support Only Two RCPs Required to be in Operation in Mode 3

9) Notation to Table 4.3-9

10) Westinghouse Optimization Program

11) "Allowable Valve" for Reactor Coolant Pump UV Trip

ENCLOSURE 4

New Issues Requested on 4/10/85 by TVA to be Addressed in Finalized Technical Specifications

1) Reactor Coolant Pumps in Operation in Mode 4

2) Source Range Response Time

3) MSIV Handswitches

4) T/S 4.5.2.h.1 - Charging Pump Flow

5) ESF Response Time for Containment Ventilation Isolation

6) Table 3.8-1 Containment Conductor Overcurrent Protective Devices

ENCLOSURE 1

Replacement Pages to Final Draft of Watts Bar Unit 1
Technical Specifications