

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.1 RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits

- LCO 3.4.1 RCS DNB parameters for pressurizer pressure, RCS average temperature, and RCS total flow rate shall be within the limits specified below:
- a. Pressurizer Pressure is greater than or equal to the limit specified in the COLR.
 - b. RCS Average Temperature is less than or equal to the limit specified in the COLR, and
 - c. RCS total flow rate \geq [301,670] gpm and greater than or equal to the limit specified in the COLR.

APPLICABILITY: MODE 1.

-----NOTE-----
Pressurizer pressure limit does not apply during:

- a. THERMAL POWER ramp > 5% RTP per minute, or
- b. THERMAL POWER step > 10% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more RCS DNB parameters not within limits.	A.1 Restore RCS DNB parameter(s) to within limit.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.1.1	Verify pressurizer pressure is greater than or equal to the limit specified in the COLR.	12 hours
SR 3.4.1.2	Verify RCS average temperature is less than or equal to the limit specified in the COLR.	12 hours
SR 3.4.1.3	Verify RCS total flow rate is \geq [301,670] gpm and greater than or equal to the limit specified in the COLR.	12 hours
SR 3.4.1.4	<p>-----NOTE----- Not required to be performed until 24 hours after \geq 90% RTP. -----</p> <p>Verify by precision heat balance that RCS total flow rate is \geq [301,670] gpm and greater than or equal to the limit specified in the COLR.</p>	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 RCS Minimum Temperature for Criticality

LCO 3.4.2 Each RCS loop average temperature (T_{avg}) shall be $\geq [551]^{\circ}\text{F}$.

APPLICABILITY: MODE 1,
MODE 2 with $k_{eff} \geq 1.0$.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. T_{avg} in one or more RCS loops not within limit.	A.1 Be in MODE 2 with $k_{eff} < 1.0$.	30 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.2.1 Verify RCS T_{avg} in each loop $\geq [551]^{\circ}\text{F}$.	12 hours

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.3 RCS pressure, RCS temperature, and RCS heatup and cooldown rates shall be maintained within the limits specified in the PTLR.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE ----- Required Action A.2 shall be completed whenever this Condition is entered. ----- Requirements of LCO not met in MODE 1, 2, 3, or 4.</p>	A.1 Restore parameters to within limits.	30 minutes
	<p><u>AND</u></p> <p>A.2 Determine RCS is acceptable for continued operation.</p>	72 hours
<p>B. Required Action and associated Completion Time of Condition A not met.</p>	B.1 Be in MODE 3.	6 hours
	<p><u>AND</u></p> <p>B.2 Be in MODE 4 with RCS pressure < 500 psig.</p>	24 hours

(continued)

ACTIONS (continued)

ACTIONS (continued)		
CONDITION	REQUIRED ACTION	COMPLETION TIME
C. -----NOTE ----- Required Action C.2 shall be completed whenever this Condition is entered. ----- Requirements of LCO not met any time in other than MODE 1, 2, 3, or 4.	C.1 Initiate action to restore parameter(s) to within limits. <u>AND</u> C.2 Determine RCS is acceptable for continued operation.	Immediately Prior to entering MODE 4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.3.1	<p>-----NOTE -----</p> <p>Only required to be performed during RCS heatup and cooldown operations and inservice leak and hydrostatic testing.</p> <p>-----</p> <p>Verify RCS pressure, RCS temperature, and RCS heatup and cooldown rates within limits specified in the PTLR.</p>	30 minutes

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 RCS Loops

LCO 3.4.4 Two RCS loops shall be OPERABLE and in operation (Four Reactor Coolant Pumps (RCPs) operating with variable speed control bypassed).

-----NOTES-----

1. No RCP shall be started when the reactor trip breakers are closed.
2. No RCP shall be started with any RCS cold leg temperature $\leq [275]^{\circ}\text{F}$ unless the secondary side water temperature of each steam generator (SG) is $\leq [50]^{\circ}\text{F}$ above each of the RCS cold leg temperatures.
3. All RCPs may be de-energized in Mode 3, 4, or 5 for ≤ 1 hour per 8 hour period provided:
 - a. No operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SDM of LCO 3.1.1; and
 - b. Core outlet temperature is maintained at least 10°F below saturation temperature.

APPLICABILITY: MODES 1 and 2,
MODES 3, 4, and 5, whenever the reactor trip breakers are closed.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Required Action A.1 must be completed whenever Condition A is entered. -----</p> <p>Requirements of LCO not met in MODE 1 or 2.</p>	<p>A.1 Be in MODE 3 with the reactor trip breakers open.</p>	<p>6 hours</p>

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. -----NOTE----- Required Action B.1 must be completed whenever Condition B is entered. -----</p> <p>Requirements of LCO not met in MODE 3, 4, or 5.</p>	<p>B.1 Be in MODE 3, 4, or 5 with the reactor trip breakers open.</p>	<p>1 hour</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.4.1 Verify each RCS loop is in operation with variable speed control bypassed.</p>	<p>12 hours</p>

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.5 Not Used.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 Pressurizer

LCO 3.4.6 The pressurizer water level shall be $\leq 92\%$ of span.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer water level not within limit.	A.1 Restore pressurizer water level within limit.	6 hours
	<u>OR</u>	
	A.2.1 Be in MODE 3 with reactor trip breakers open. <u>AND</u> A.2.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.6.1 Verify pressurizer water level $\leq 92\%$ of span.	12 hours

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 Pressurizer Safety Valves

LCO 3.4.7 Two pressurizer safety valves shall be OPERABLE with lift settings ≥ 2460 psig and ≤ 2510 psig.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with RNS isolated or RCS temperature $\geq 275^{\circ}\text{F}$.

-----NOTE-----
The lift settings are not required to be within the LCO limits during MODES 3 and 4 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions.

This exception is allowed for 36 hours following entry into MODE 3, provided a preliminary cold setting was made prior to heatup.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pressurizer safety valve inoperable.	A.1 Restore valve to OPERABLE status.	15 minutes
B. Required Action and associated Completion Time not met. <u>OR</u> Two pressurizer safety valves inoperable.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4 with RNS aligned to the RCS and RCS temperature $< 275^{\circ}\text{F}$.	6 hours 24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Verify each pressurizer safety valve OPERABLE in accordance with the Inservice Testing Program. Following testing, lift settings shall be within $\pm 1\%$.	In accordance with the Inservice Testing Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.8 RCS Operational LEAKAGE

- LC0 3.4.8 RCS operational LEAKAGE shall be limited to:
- a. No pressure boundary LEAKAGE,
 - b. 0.5 gpm unidentified LEAKAGE,
 - c. 10 gpm identified LEAKAGE from the RCS,
 - d. 300 gallons per day total primary to secondary LEAKAGE through both steam generators (SGs),
 - e. 150 gallons per day primary to secondary LEAKAGE through any one SG, and
 - f. 500 gallons per day primary to IRWST LEAKAGE through the passive residual heat removal heat exchanger (PRHR HX).

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCS LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE.	A.1 Reduce LEAKAGE to within limits.	4 hours
B. Required Action and associated Completion Time not met. <u>OR</u> Pressure boundary LEAKAGE exists.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	<p>-----NOTE----- Not required to be performed in MODES 3 and 4 until 12 hours of steady state operation. -----</p> <p>Verify RCS Operational leakage is within limits by performance of RCS water inventory balance.</p>	72 hours
SR 3.4.8.2	Verify steam generator tube integrity is in accordance with the Steam Generator Tube Surveillance Program.	In accordance with the Steam Generator Tube Surveillance Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Minimum RCS Flow

LCO 3.4.9 At least one Reactor Coolant Pump (RCP) shall be in operation with a total flow through the core of at least [10,000] gpm.

NOTES

1. All RCPs may be de-energized for ≤ 1 hour per 8 hour period provided:
 - a. No operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SDM of LCO 3.1.1; and
 - b. Core outlet temperature is maintained at least 10°F below saturation temperature.
2. No RCP shall be started with any RCS cold leg temperature $\leq [275]^{\circ}\text{F}$ unless the secondary side water temperature of each steam generator (SG) is $\leq [50]^{\circ}\text{F}$ above each of the RCS cold leg temperatures.

APPLICABILITY: MODES 3, 4, and 5, whenever the reactor trip breakers are open.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. No RCP in operation.	A.1 Isolate all sources of unborated water.	1 hour
	<u>AND</u> A.2 Perform SR 3.1.1.1, (SDM verification).	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	Verify that at least one RCP is in operation at \geq [25%] rated speed or equivalent.	12 hours

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3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 RCS Leakage Detection Instrumentation

LCO 3.4.10 The following RCS leakage detection instrumentation shall be OPERABLE:

- a. One containment sump level channel;
- b. One containment atmosphere radioactivity monitor (gaseous N13/F18).

-----NOTE-----
The N13/F18 containment atmosphere radioactivity monitor is only required to be OPERABLE in MODE 1 with RTP > 20%.

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

- NOTE-----
1. Containment sump level measurements cannot be used for leak detection if leakage is prevented from draining to the sump such as by redirection to the IRWST by the containment shell gutter drains.
 2. LCO 3.0.4 is not applicable.
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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Two containment sump channels inoperable.	<p>A.1 -----NOTE----- Not required until 12 hours after establishment of steady state operation. -----</p> <p>Perform SR 3.4.8.1 (RCS inventory balance).</p>	Once per 24 hours

AND

A.2 Restore one
containment sump
channel to OPERABLE
status.

72 hours

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required containment atmosphere radioactivity monitor inoperable.	B.1.1 Analyze grab samples of containment atmosphere.	Once per 24 hours
	<u>OR</u>	
	B.1.2 -----NOTE----- Not required until 12 hours after establishment of steady state operation. -----	Once per 24 hours
	Perform SR 3.4.8.1.	
	<u>AND</u>	
	B.2 Restore containment atmosphere radioactivity monitor to OPERABLE status.	30 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	C.2 Be in MODE 5.	36 hours
D. All required monitors inoperable.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Perform a CHANNEL CHECK of required containment atmosphere radioactivity monitor.	12 hours
SR 3.4.10.2	Perform a COT of required containment atmosphere radioactivity monitor.	92 days
SR 3.4.10.3	Perform a CHANNEL CALIBRATION of required containment sump monitor.	24 months
SR 3.4.10.4	Perform a CHANNEL CALIBRATION of required containment atmosphere radioactivity monitor.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 RCS Specific Activity

LCO 3.4.11 The specific activity of the reactor coolant shall be within limits.

APPLICABILITY: MODES 1 and 2,
MODE 3 with RCS average temperature (T_{avg}) $\geq 500^{\circ}\text{F}$.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 $> 1.0 \mu\text{Ci/gm}$.	-----NOTE----- LCO 3.0.4 is not applicable. -----	
	A.1 Verify DOSE EQUIVALENT I-131 to be $\leq 60 \mu\text{Ci/gm}$.	Once per 4 hours
	<u>AND</u> A.2 Restore DOSE EQUIVALENT I-131 to within limit.	48 hours
B. DOSE EQUIVALENT XE-133 $> 280 \mu\text{Ci/gm}$.	B.1 Perform SR 3.4.11.2.	4 hours
	<u>AND</u> B.2 Be in MODE 3 with T_{avg} $< 500^{\circ}\text{F}$.	6 hours

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A not met. <u>OR</u> DOSE EQUIVALENT I-131 > 60 $\mu\text{Ci/gm.}$	C.1 Be in MODE 3 with $T_{\text{avg}} < 500^{\circ}\text{F.}$	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.11.1 Verify reactor coolant DOSE EQUIVALENT XE-133 specific activity $\leq 280 \mu\text{Ci/gm.}$	7 days
SR 3.4.11.2 -----NOTE----- Only required to be performed in MODE 1. ----- Verify reactor coolant DOSE EQUIVALENT I-131 specific activity $\leq 1.0 \mu\text{Ci/gm.}$	14 days <u>AND</u> Between 2 to 6 hours after a THERMAL POWER change of $\geq 15\%$ of RTP within a 1 hour period

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12 Automatic Depressurization System (ADS) – Operating

LC0 3.4.12 The ADS, including 10 flow paths, shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One flow path inoperable.</p> <p><u>OR</u></p> <p>One stage 1 ADS flow path inoperable and one stage 2 ADS flow path inoperable.</p> <p><u>OR</u></p> <p>One stage 1 ADS flow path inoperable and one stage 3 ADS flow path inoperable.</p>	<p>A.1 Restore flow path(s) to OPERABLE status.</p>	<p>72 hours</p>
<p>B. Required Action and associated Completion Time not met.</p> <p><u>OR</u></p> <p>Requirements of LC0 not met for reasons other than Condition A.</p>	<p>B.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>B.2 Be in MODE 5.</p>	<p>6 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.12.1	Verify that the motor operated valve in series with each 4th stage ADS valve is fully open.	12 hours
SR 3.4.12.2	Verify that each stage 1, 2, and 3 ADS valve is OPERABLE by stroking them open.	In accordance with the Inservice Testing Program
SR 3.4.12.3	Verify that each stage 4 ADS valve is OPERABLE in accordance with the Inservice Testing Program.	In accordance with the Inservice Testing Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 Automatic Depressurization System (ADS) – Shutdown, RCS Intact

LCO 3.4.13 The ADS, including 9 flow paths, shall be OPERABLE.

APPLICABILITY: MODE 5 with RCS pressure boundary intact.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One required flow path inoperable.</p> <p><u>OR</u></p> <p>One required stage 1 ADS flow path and one required stage 2 or stage 3 ADS flow path inoperable.</p>	<p>A.1 Restore flow path(s) to OPERABLE status.</p>	<p>72 hours</p>
<p>B. Required Action and associated Completion Time not met.</p> <p><u>OR</u></p> <p>Requirements of LCO not met for reasons other than Condition A.</p>	<p>B.1 Initiate action to be in MODE 5, with RCS open and $\geq 20\%$ pressurizer level.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.13.1	For flow paths required to be OPERABLE, the SRs of LCO 3.4.12, "Automatic Depressurization System (ADS) – Operating" are applicable.	In accordance with applicable SRs

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.14 Automatic Depressurization System (ADS) - Shutdown, RCS Open

LCO 3.4.14 ADS stage 1, 2, and 3, flow paths shall be open.
ADS stage 4 with 2 flow paths shall be OPERABLE.

-----NOTE-----
In MODE 5, the ADS valves may be closed to facilitate RCS vacuum fill operations to establish a pressurizer level $\geq 20\%$, provided ADS valve OPERABILITY meets LCO 3.4.13, ADS - Shutdown, RCS Intact.

APPLICABILITY: MODE 5 with RCS pressure boundary open or pressurizer level $< 20\%$;
MODE 6 with upper internals in place.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required ADS stage 1, 2, or 3 flow path closed.	A.1 Open the affected flow path.	72 hours
	<u>OR</u> A.2 Open an alternative flow path with an equivalent area.	72 hours
B. One required ADS stage 4 flow path closed and inoperable.	B.1 Open an alternative flow path with an equivalent area.	36 hours
	<u>OR</u> B.2 Restore two ADS stage 4 flow paths to OPERABLE status.	36 hours

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ACTIONS (continued)

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.14.1 Verify that each ADS stage 1, 2, and 3 valve is in the fully open position.	12 hours
SR 3.4.14.2 For each ADS stage 4 flow path required to be OPERABLE, the following SRs of LCO 3.4.12, "Automatic Depressurization System (ADS) – Operating" are applicable: SR 3.4.12.1 SR 3.4.12.3	In accordance with applicable SRs

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.15 Low Temperature Overpressure Protection (LTOP) System

LC0 3.4.15 At least one of the following Overpressure Protection Systems shall be OPERABLE, with the accumulators isolated:

- a. The Normal Residual Heat Removal System (RNS) suction relief valve, or
- b. The RCS depressurized and an RCS vent of $\geq [5.4]$ square inches.

-----NOTE-----
When the RCS temperature is $\geq 200^{\circ}\text{F}$, a reactor coolant pump (RCP) may not be started if the pressurizer level is $\geq 92\%$.

APPLICABILITY: MODE 4 when any cold leg temperature is $\leq 275^{\circ}\text{F}$,
MODE 5,
MODE 6 when the reactor vessel head is on.

-----NOTE-----
Accumulator isolation is only required when accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed by the P/T limit curves provided in the PTLR.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. An accumulator not isolated when the accumulator pressure is \geq to the maximum RCS pressure for existing cold leg temperature allowed in the PTLR.	A.1 Isolate affected accumulator.	1 hour

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met.	B.1 Increase RCS cold leg temperature to a level acceptable for the existing accumulator pressure allowed in the PTLR.	12 hours
	<u>OR</u> B.2 Depressurize affected accumulator to less than the maximum RCS pressure for existing cold leg temperature allowed in the PTLR.	12 hours
C. The RNS suction relief valve inoperable.	C.1 Restore the RNS suction relief valve to OPERABLE status.	12 hours
	<u>OR</u> C.2 Depressurize RCS and establish RCS vent of $\geq [5.4]$ square inches.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.1	Verify each accumulator is isolated.	12 hours
SR 3.4.15.2	Verify both RNS suction isolation valves in one RNS suction flow path are open.	12 hours
SR 3.4.15.3	<p>-----NOTE----- Only required to be performed when complying with LCO 3.4.15.b. -----</p> <p>Verify RCS vent \geq [5.4] square inches is open.</p>	<p>12 hours for unlocked-open vent</p> <p><u>AND</u></p> <p>31 days for locked-open vent</p>
SR 3.4.15.4	Verify the lift setting of the RNS suction relief valve.	In accordance with the Inservice Testing Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 RCS Pressure Isolation Valve (PIV) Integrity

LCO 3.4.16 Leakage from each RCS PIV shall be within limit.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4, with the RCS not being cooled by the RNS.

ACTIONS

- NOTES-----
1. Separate Condition entry is allowed for each flow path.
 2. Enter applicable Conditions and Required Actions for systems made inoperable by an inoperable PIV.
-

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Leakage from one or more RCS PIVs not within limit.	-----NOTE----- Each valve used to satisfy Required Action A.1 and Required Action A.2 must have been verified to meet SR 3.4.16.1 and be in the reactor coolant pressure boundary or the high pressure portion of the system.	
	A.1 Isolate the high pressure portion of the affected system from the low pressure portion by use of one closed manual, deactivated automatic, or check valve.	8 hours
	<u>AND</u> A.2 Verify a second OPERABLE PIV can meet the leakage limits. This valve is required to be a check valve, or a closed valve, if it isolates a line that penetrates containment.	72 hours

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.16.1 Verify leakage of each RCS PIV is equivalent to ≤ 0.5 gpm per nominal inch valve size up to a maximum of 5 gpm at an RCS pressure $\geq [2215]$ and $\leq [2255]$ psig.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.17 Reactor Vessel Head Vent (RVHV)

LCO 3.4.17 The Reactor Vessel Head Vent shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with the RCS not being cooled by the RNS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One flow path inoperable.	A.1 Restore flow path to OPERABLE status.	72 hours
B. Two flow paths inoperable.	B.1 Restore at least one flow path to OPERABLE status.	6 hours
C. Required Action and associated Completion Time not met. <u>OR</u> Requirements of LCO not met for reasons other than Conditions A or B.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4, with the RCS cooling provided by the RNS.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.17.1 Verify that each RVHV valve is OPERABLE by stroking it open.	In accordance with the Inservice Testing Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.18 Chemical and Volume Control System (CVS) Makeup Isolation Valves

LC0 3.4.18 Two CVS Makeup Isolation Valves shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CVS makeup isolation valve inoperable.	A.1 Restore two CVS makeup isolation valves to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met. <u>OR</u> Two CVS makeup isolation valves inoperable.	-----NOTE----- Flow path(s) may be unisolated intermittently under administrative controls. ----- B.1 Isolate the flow path from the CVS makeup pumps to the Reactor Coolant System by use of at least one closed manual or one closed and de-activated automatic valve.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.18.1	Verify two CVS makeup isolation valves are OPERABLE by stroking the valves closed.	In accordance with the Inservice Testing Program
SR 3.4.18.2	Verify closure time of each CVS makeup isolation valve is ≤ 10 seconds on an actual or simulated actuation signal.	In accordance with the Inservice Testing Program

3.5 PASSIVE CORE COOLING SYSTEM (PXS)

3.5.1 Accumulators

LC0 3.5.1 Both accumulators shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODES 3 and 4 with RCS pressure > 1000 psig.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One accumulator inoperable due to boron concentration outside limits.	A.1 Restore boron concentration to within limits.	72 hours
B. One accumulator inoperable for reasons other than Condition A.	B.1 Restore accumulator to OPERABLE status.	8 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3 <u>AND</u> C.2 Reduce RCS pressure to ≤ 1000 psig.	6 hours 12 hours
D. Two accumulators inoperable.	D.1 Enter LC0 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.1.1 Verify each accumulator isolation valve is fully open.	12 hours
SR 3.5.1.2 Verify the borated water volume in each accumulator is ≥ 1667 cu. ft., and ≤ 1732 cu. ft.	12 hours
SR 3.5.1.3 Verify the nitrogen cover gas pressure in each accumulator is ≥ 637 psig and ≤ 769 psig.	12 hours
SR 3.5.1.4 Verify the boron concentration in each accumulator is ≥ 2600 ppm and ≤ 2900 ppm.	<p>31 days</p> <p><u>AND</u></p> <p>-----NOTE---</p> <p>Only required for affected accumulators.</p> <p>-----</p> <p>Once within 6 hours after each solution volume increase of ≥ 51 cu. ft., 3.0% that is not the result of addition from the in-containment refueling water storage tank</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.5	Verify power is removed from each accumulator isolation valve operator when pressurizer pressure is ≥ 2000 psig.	31 days
SR 3.5.1.6	Verify system flow performance of each accumulator in accordance with the System Level Operability Testing Program.	10 years

3.5 PASSIVE CORE COOLING SYSTEM (PXS)

3.5.2 Core Makeup Tanks (CMTs) – Operating

LC0 3.5.2 Both CMTs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4 with the RCS not being cooled by the Normal Residual Heat Removal System (RNS).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CMT inoperable due to one CMT outlet isolation valve inoperable.	A.1 Restore outlet isolation valve to OPERABLE status.	72 hours
B. One CMT inoperable due to one or more parameters (water temperature, boron concentration) not within limits.	B.1 Restore water temperature or boron concentration to within limits.	72 hours
C. Two CMTs inoperable due to water temperature or boron concentration not within limits.	C.1 Restore water temperature or boron concentration to within limits for one CMT.	8 hours
D. One CMT inoperable due to presence of non-condensable gases in one high point vent.	D.1 Vent non-condensable gases.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One CMT inoperable for reasons other than Condition A, B, C, or D.	E.1 Restore CMT to OPERABLE status.	8 hours
F. Required Action and associated Completion Time not met. <u>OR</u> LCO not met for reasons other than A, B, C, D, or E.	F.1 Be in MODE 3. <u>AND</u> F.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	Verify the temperature of the borated water in each CMT is $< 120^{\circ}\text{F}$.	24 hours
SR 3.5.2.2	Verify the borated water volume in each CMT is ≥ 2500 cu. ft.	7 days
SR 3.5.2.3	Verify each CMT inlet isolation valve is fully open.	12 hours
SR 3.5.2.4	Verify the volume of non-condensable gases in each CMT inlet line is $\leq [0.2] \text{ ft}^3$.	24 hours
SR 3.5.2.5	Verify the boron concentration in each CMT is ≥ 3400 ppm, and ≤ 3700 ppm.	7 days
SR 3.5.2.6	Verify each CMT outlet isolation valve is OPERABLE by stroking it open.	In accordance with the Inservice Testing Program
SR 3.5.2.7	Verify system flow performance of each CMT in accordance with the System Level Operability Testing Program.	10 years

3.5 PASSIVE CORE COOLING SYSTEM (PXS)

3.5.3 Core Makeup Tanks (CMTs) – Shutdown, RCS Intact

LCO 3.5.3 One CMT shall be OPERABLE.

APPLICABILITY: MODE 4 with the RCS cooling provided by the Normal Residual Heat Removal System (RNS),
MODE 5 with the RCS pressure boundary intact.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required CMT inoperable due to one outlet isolation valve inoperable.	A.1 Restore required isolation valve to OPERABLE status.	72 hours
B. Required CMT inoperable due to one or more parameters (water temperature, boron concentration) not within limits.	B.1 Restore water temperature or boron concentration to within limits.	72 hours
C. Required CMT inoperable for reasons other than A or B.	C.1 Restore required CMT to OPERABLE status.	8 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. Required Action and associated Completion Time not met.</p> <p><u>OR</u></p> <p>LCO not met for reasons other than A, B, or C.</p>	<p>D.1 Initiate action to be in MODE 5 with RCS pressure boundary open and \geq 20% pressurizer level.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.5.3.1 For the CMT required to be OPERABLE, the SRs of Specification 3.5.2, "Core Makeup Tanks (CMTs) – Operating" are applicable.</p>	<p>In accordance with applicable SRs</p>

3.5 PASSIVE CORE COOLING SYSTEM (PXS)

3.5.4 Passive Residual Heat Removal Heat Exchanger (PRHR HX) – Operating

LCO 3.5.4 The PRHR HX shall be OPERABLE.

-----NOTE-----
When any reactor coolant pumps (RCPs) are operating, at least one RCP must be operating in the loop with the PRHR HX, Loop 1.

APPLICABILITY: MODES 1, 2, 3, and 4 with the RCS not being cooled by the Normal Residual Heat Removal System (RNS).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One air operated outlet isolation valve inoperable.	A.1 Restore air operated outlet isolation valve to OPERABLE status.	72 hours
B. One air operated IRWST gutter isolation valve inoperable.	B.1 Restore air operated IRWST gutter isolation valve to OPERABLE status.	72 hours
C. Presence of non-condensable gases in the high point vent.	C.1 Vent non-condensable gases.	24 hours
D. Required Action and associated Completion Time of Conditions A, B, or C not met.	D.1 Be in MODE 3.	6 hours
	<u>AND</u> D.2 Be in MODE 4 with the RCS cooling provided by the RNS.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. LCO not met for reasons other than A, B, or C.	E.1 Restore PRHR HX to OPERABLE status.	8 hours
F. Required Action and associated Completion Time for Condition E not met.	<p>F.1 -----NOTE----- Prior to initiating actions to change to a lower MODE, verify that redundant means of providing SG feedwater are OPERABLE. If redundant means are not OPERABLE, suspend LCO 3.0.3 and all other LCO Required Actions requiring MODE changes until redundant means are restored to OPERABLE status. -----</p> <p>Be in MODE 3.</p>	6 hours
	<p><u>AND</u></p> <p>F.2 -----NOTE----- Prior to stopping the SG feedwater, verify that redundant means of cooling the RCS to cold shutdown conditions are OPERABLE. If redundant means are not OPERABLE, suspend LCO 3.0.3 and all other LCO Required Actions requiring MODE changes until redundant means are restored to OPERABLE status. -----</p> <p>Be in MODE 5.</p>	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.4.1	Verify the outlet manual isolation valve is fully open.	12 hours
SR 3.5.4.2	Verify the inlet motor operated isolation valve is open.	12 hours
SR 3.5.4.3	Verify the volume of noncondensable gases in the PRHR HX inlet line is $\leq [0.4] \text{ ft}^3$.	24 hours
SR 3.5.4.4	Verify that power is removed from the inlet motor operated isolation valve.	31 days
SR 3.5.4.5	Verify both PRHR air operated outlet isolation valves and both IRWST gutter isolation valves are OPERABLE by stroking open the valves.	In accordance with the System Level Inservice Testing Program
SR 3.5.4.6	Verify PRHR HX heat transfer performance in accordance with the System Level Operability Testing Program.	10 years
SR 3.5.4.7	Verify by visual inspection that the IRWST gutters are not restricted by debris.	24 months

3.5 PASSIVE CORE COOLING SYSTEM (PXS)

3.5.5 Passive Residual Heat Removal Heat Exchanger (PRHR HX) – Shutdown, RCS Intact

LC0 3.5.5 The PRHR HX shall be OPERABLE.

-----NOTE-----
When any reactor coolant pumps (RCPs) are operating, at least one RCP must be operating in loop one.

APPLICABILITY: MODE 4 with the RCS cooling provided by the Normal Residual Heat Removal System (RNS),
MODE 5 with the RCS pressure boundary intact.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One air operated outlet isolation valve inoperable.	A.1 Restore air operated outlet valve to OPERABLE status.	72 hours
B. One air operated IRWST gutter isolation valve inoperable.	B.1 Restore air operated IRWST gutter isolation valve to OPERABLE status.	72 hours
C. Presence of non-condensable gases in the high point vent.	C.1 Vent noncondensable gases.	24 hours
D. PRHR HX inoperable for reasons other than A, B, or C.	D.1 Restore PRHR HX to OPERABLE status.	8 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>E. Required Action and associated Completion Time not met.</p> <p><u>OR</u></p> <p>LCO not met for reasons other than A, B, C, or D.</p>	<p>E.1 Initiate action to be in MODE 5 with the RCS pressure boundary open and > 20% pressurizer level.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.5.5.1 The SRs of Specification 3.5.4, "Passive Residual Heat Removal Heat Exchanger (PRHR HX) – Operating" are applicable.</p>	<p>In accordance with applicable SRs</p>

3.5 PASSIVE CORE COOLING SYSTEM (PXS)

3.5.6 In-containment Refueling Water Storage Tank (IRWST) – Operating

LCO 3.5.6 The IRWST, with two injection flow paths and two containment recirculation flow paths, shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One motor operated containment recirculation isolation valve not fully open.	A.1 Open motor operated containment recirculation isolation valve.	72 hours
B. IRWST inoperable due to one or more parameters (volume, temperature, and boron concentration) not within limits.	B.1 Restore IRWST to OPERABLE status.	8 hours
C. One motor operated IRWST isolation valve not fully open.	C.1 Restore motor operated IRWST isolation valve to fully open condition.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met. <u>OR</u> LCO not met for reasons other than A, B, or C.	D.1 Be in MODE 3.	6 hours
	<u>AND</u> D.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.6.1 Verify the IRWST water temperature is < 120°F.	24 hours
SR 3.5.6.2 Verify the IRWST borated water volume is > [78,900] cu. ft.	24 hours
SR 3.5.6.3 Verify the IRWST boron concentration is \geq 2600 ppm and \leq 2900 ppm.	31 days <u>AND</u> Once within 6 hours after each solution volume increase of 15,000 gal.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.6.4	Verify each motor operated IRWST isolation valve is fully open.	12 hours
SR 3.5.6.5	Verify power is removed from each motor operated IRWST isolation valve.	31 days
SR 3.5.6.6	Verify each motor operated containment recirculation isolation valve is fully open.	31 days
SR 3.5.6.7	Verify each IRWST injection and containment recirculation squib valve is OPERABLE in accordance with the Inservice Testing Program.	In accordance with the Inservice Testing Program
SR 3.5.6.8	Verify by visual inspection that the IRWST screens and the containment recirculation screens are not restricted by debris.	24 months
SR 3.5.6.9	Verify IRWST injection and recirculation system flow performance in accordance with the System Level Operability Testing Program.	10 years

3.5 PASSIVE CORE COOLING SYSTEM (PXS)

3.5.7 In-containment Refueling Water Storage Tank (IRWST) – Shutdown, MODE 5

LC0 3.5.7 The IRWST, with one injection flow path and one containment recirculation flow path, shall be OPERABLE.

APPLICABILITY: MODE 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required motor operated containment recirculation isolation valve not fully open.	A.1 Open required motor operated containment recirculation isolation valve.	72 hours
B. IRWST inoperable due to one or more parameters (volume, temperature, and boron concentration) not within limits.	B.1 Restore IRWST to OPERABLE status.	8 hours
C. Required motor operated IRWST isolation valve not fully open.	C.1 Restore required motor operated IRWST isolation valve to fully open condition.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met. <u>OR</u> LCO not met for reasons other than A, B, or C.	D.1 Initiate action to be in MODE 5 with the RCS pressure boundary intact and $\geq 20\%$ pressurizer level. <u>AND</u> D.2 Suspend positive reactivity additions.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.7.1 For the IRWST and flow paths required to be OPERABLE, the SRs of Specification 3.5.6, "In-containment Refueling Water Storage Tank (IRWST) – Operating" are applicable.	In accordance with applicable SRs

3.5 PASSIVE CORE COOLING SYSTEMS

3.5.8 In-containment Refueling Water Storage Tank (IRWST) – Shutdown, MODE 6

LC0 3.5.8 The IRWST, with one injection flow path and one containment recirculation flow path, shall be OPERABLE.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required motor operated containment recirculation isolation valve not fully open.	A.1 Open required motor operated containment recirculation isolation valve.	72 hours
B. IRWST and refueling cavity inoperable due to one or more parameters (volume, temperature, and boron concentration) not within limits.	B.1 Restore IRWST to OPERABLE status.	8 hours
C. Required motor operated IRWST isolation valve not fully open.	C.1 Restore required motor operated IRWST isolation valve to fully open condition.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met. <u>OR</u> LCO not met for reasons other than A, B, or C.	D.1 Initiate action to be in MODE 6 with the water level \geq 23 feet above the top of the reactor vessel flange. <u>AND</u> D.2 Suspend positive reactivity additions.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.8.1	Verify the IRWST and refueling cavity water temperature is < 120°F.	24 hours
SR 3.5.8.2	Verify the IRWST and refueling cavity water total borated water volume is > [78,900] cu. ft.	24 hours
SR 3.5.8.3	Verify the IRWST and refueling cavity boron concentration is \geq 2600 ppm and \leq 2900 ppm.	31 days <u>AND</u> Once within 6 hours after each solution volume increase of 15,000 gal.
SR 3.5.8.4	For the IRWST and flow paths required to be OPERABLE, the following SRs of Specification 3.5.6, "In-containment Refueling Water Storage Tank (IRWST) – Operating" are applicable: SR 3.5.6.4 SR 3.5.6.6 SR 3.5.6.8 SR 3.5.6.5 SR 3.5.6.7	In accordance with applicable SRs

3.6 CONTAINMENT SYSTEMS

3.6.1 Containment

LC0 3.6.1 Containment shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment inoperable.	A.1 Restore containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1	Perform required visual examinations and leakage-rate testing except for containment air-lock testing, in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program

3.6 CONTAINMENT SYSTEMS

3.6.2 Containment Air Locks

LC0 3.6.2 Two containment air locks shall be OPERABLE.

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

ACTIONS

-----NOTES-----

1. Entry and exit is permissible to perform repairs on the affected air lock components.
2. Separate Condition entry is allowed for each air lock.
3. Enter applicable Conditions and Required Actions of LC0 3.6.1, "Containment," when air lock leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment air locks with one containment air lock door inoperable..	-----NOTES-----	
	1. Required Actions A.1, A.2, and A.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered.	
	2. Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable.	

	A.1 Verify the OPERABLE door is closed in the affected air lock.	1 hour
	<u>AND</u>	
	A.2 Lock the OPERABLE door closed in the affected air lock.	24 hours
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	<p><u>AND</u></p> <p>A.3 -----NOTE----- Air lock doors in high radiation areas may be verified locked closed by administrative means. -----</p> <p>Verify the OPERABLE door is locked closed in the affected air lock.</p>	Once per 31 days
B. One or more containment air locks with containment air lock interlock mechanism inoperable.	<p>-----NOTES-----</p> <p>1. Required Actions B.1, B.2, and B.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered.</p> <p>2. Entry and exit of containment is permissible under the control of a dedicated individual. -----</p> <p>B.1 Verify an OPERABLE door is closed in the affected air lock.</p> <p><u>AND</u></p> <p>B.2 Lock an OPERABLE door closed in the affected air lock.</p> <p><u>AND</u></p>	<p>1 hour</p> <p>24 hours</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	<p>B.3 -----NOTE----- Air lock doors in high radiation areas may be verified locked closed by administrative means. -----</p> <p>Verify an OPERABLE door is locked closed in the affected air lock.</p>	Once per 31 days
C. One or more containment air locks inoperable for reasons other than Condition A or B.	<p>C.1 Initiate action to evaluate overall containment leakage rate per LCO 3.6.1</p> <p><u>AND</u></p> <p>C.2 Verify a door is closed in the affected air lock.</p> <p><u>AND</u></p> <p>C.3 Restore air lock to OPERABLE status.</p>	<p>Immediately</p> <p>1 hour</p> <p>24 hours</p>
D. Required Action and associated Completion Time not met.	<p>D.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>D.2 Be in MODE 5.</p>	<p>6 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.2.1</p> <p>-----NOTES-----</p> <ol style="list-style-type: none"> 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1. <p>-----</p> <p>Perform required air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program.</p>	<p>In accordance with the Containment Leakage Rate Testing Program</p>
<p>SR 3.6.2.2</p> <p>Verify only one door in the air lock can be opened at a time.</p>	<p>24 months</p>

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves

LC0 3.6.3 Each containment isolation valve shall be OPERABLE.

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

ACTIONS

NOTES

1. Penetration flow path(s) may be unisolated intermittently under administrative controls.
2. Separate Condition entry is allowed for each penetration flow path.
3. Enter applicable Conditions and Required Actions for systems made inoperable by containment isolation valves.
4. Enter applicable Conditions and Required Actions of LC0 3.6.1, "Containment," when isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Only applicable to penetration flow paths with two containment isolation valves. -----</p> <p>One or more penetration flow paths with one containment isolation valve inoperable.</p>	<p>A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.</p> <p><u>AND</u></p> <p>A.2 -----NOTE----- 1. Isolation devices in high radiation areas may be verified by use of administrative means.</p>	4 hours

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|--|
| 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by administrative means.
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(continued)

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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment <u>AND</u> Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
B. -----NOTE----- Only applicable to penetration flow paths with two containment isolation valves. ----- One or more penetration flow paths with two containment isolation valves inoperable.	B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	1 hour

(continued)

ACTIONS (continued)

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.3.1 Verify each [16 inch] containment purge valve is closed, except when the [16 inch] containment purge valves are open for pressure control, ALARA or air quality considerations for personnel containment entry, or for Surveillances which require the valves to be open.</p>	<p>31 days</p>
<p>SR 3.6.3.2 -----NOTE----- Valves and blind flanges in high radiation areas may be verified by use of administrative controls. ----- Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.</p>	<p>31 days</p>
<p>SR 3.6.3.3 -----NOTE----- Valves and blind flanges in high radiation areas may be verified by use of administrative controls. ----- Verify each containment isolation manual valve and blind flange that is located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.</p>	<p>Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	Verify the isolation time of each automatic power operated containment isolation valve is within limits.	In accordance with the Inservice Testing Program
SR 3.6.3.5	Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	24 months

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure

LC0 3.6.4 Containment pressure shall be $\geq [-0.2]$ psig and $\leq +1.0$ psig.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment pressure not within limits.	A.1 Restore containment pressure to within limits.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1 Verify containment pressure is within limits.	12 hours

Reviewer's Note: The low pressure limit is not needed for plant locations for which the lowest possible ambient temperature is approximately 20°F.

3.6 CONTAINMENT SYSTEMS

3.6.5 Containment Air Temperature

LC0 3.6.5 Containment average air temperature shall be $\leq 120^{\circ}\text{F}$.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment average air temperature not within limit.	A.1 Restore containment average air temperature to within limit.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.5.1 Verify containment average air temperature is within limit.	24 hours

3.6 CONTAINMENT SYSTEMS

3.6.6 Passive Containment Cooling System (PCS) – Operating

LCO 3.6.6 The passive containment cooling system shall be OPERABLE, with all three water flow paths OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One passive containment cooling water flow path inoperable.	A.1 Restore flow path to OPERABLE status.	7 days
B. Two passive containment cooling water flow paths inoperable.	B.1 Restore flow paths to operable status.	72 hours
C. One or more water storage tank parameters (temperature and volume) not within limits.	C.1 Restore water storage tank to OPERABLE status.	8 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met. <u>OR</u> LCO not met for reasons other than A, B, or C.	D.1 Be in MODE 3. <u>AND</u>	6 hours
	D.2 Be in MODE 5.	84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.6.1 -----NOTE----- Only required to be performed when the ambient temperature is $\leq 32^{\circ}\text{F}$ or $\geq 100^{\circ}\text{F}$ ----- Verify the water storage tank temperature $\geq 40^{\circ}\text{F}$ and $\leq 120^{\circ}\text{F}$.	24 hours
SR 3.6.6.2 Verify the water storage tank volume $\geq 755,000$ gallons.	7 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.6.6.3 Verify each passive containment cooling system, power operated, and automatic valve in each flow path that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.6.6.4 Verify each passive containment cooling system automatic valve in each flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.6.6.5 Verify the air flow path from the shield building annulus inlet to the exit is unobstructed and, that all air baffle sections are in place.	24 months
SR 3.6.6.6 Verify passive containment cooling system flow and water coverage performance in accordance with the System Level Operability Testing Program.	At first refueling <u>AND</u> 10 years

3.6 CONTAINMENT SYSTEMS

3.6.7 Passive Containment Cooling System (PCS) – Shutdown

LC0 3.6.7 The passive containment cooling system shall be OPERABLE with all three water flow paths OPERABLE.

APPLICABILITY: MODE 5 with the calculated reactor decay heat > 9.0 MWt,
MODE 6 with the calculated reactor decay heat > 9.0 MWt.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One passive containment cooling water flow path inoperable.	A.1 Restore flow path to OPERABLE status.	7 days
B. Two passive containment cooling water flow paths inoperable.	B.1 Restore flow paths to operable status.	72 hours
C. One or more water storage tank parameters (temperature and volume) not within limits.	C.1 Restore water storage tank to OPERABLE status.	8 hours

(continued)

ACTIONS (continued)

<p>D. Required Action and associated Completion Time not met.</p> <p><u>OR</u></p> <p>LCO not met for reasons other than A, B, or C.</p>	<p>D.1.1 If in MODE 5, initiate action to be in MODE 5 with the RCS pressure boundary intact and $\geq 20\%$ pressurizer level.</p>	Immediately
	<p><u>OR</u></p> <p>D.1.2 If in MODE 6, initiate action to be in MODE 6 with the water level ≥ 23 feet above the top of the reactor vessel flange.</p>	Immediately
	<p><u>AND</u></p> <p>D.2 Suspend positive reactivity additions.</p>	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.7.1	The SRs of Specification 3.6.6, "Passive Containment Cooling System – Operating" are applicable.	In accordance with applicable SRs

3.6 CONTAINMENT SYSTEMS

3.6.8 Containment Penetrations

- LC0 3.6.8 The containment penetrations shall be in the following status:
- a. The equipment hatches closed and held in place by [four] bolts or, if open, clear of obstructions such that the hatches can be closed prior to steaming into the containment.
 - b. One door in each air lock closed or, if open, the containment air locks shall be clear of obstructions such that they can be closed prior to steaming into the containment.
 - c. The containment spare penetrations, if open, shall be clear of obstructions such that the penetrations can be closed prior to steaming into the containment.
 - d. Each penetration providing direct access from the containment atmosphere to the outside atmosphere either:
 1. closed by a manual or automatic isolation valve, blind flange, or equivalent, or
 2. capable of being closed by an OPERABLE Containment Isolation signal.

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1 Restore containment penetrations to required status.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. Required Action and associated Completion Time not met.</p> <p><u>OR</u></p> <p>LCO not met for reasons other than Condition A.</p>	<p>B.1.1 If in MODE 5, initiate action to be in MODE 5 with the RCS pressure boundary intact and $\geq 20\%$ pressurizer level.</p>	Immediately
	<p><u>OR</u></p> <p>B.1.2 If in MODE 6, initiate action to be in MODE 6 with the water level ≥ 23 feet above the top of the reactor vessel flange.</p>	Immediately
	<p><u>AND</u></p> <p>B.2 Suspend positive reactivity additions.</p>	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.8.1 Verify each required containment penetration is in the required status.</p>	<p>7 days</p>
<p>SR 3.6.8.2 -----NOTE----- Only required to be met for an open equipment hatch. ----- Verify that the hardware, tools, equipment and power source necessary to install the equipment hatch are available.</p>	<p>Prior to hatch removal <u>AND</u> 7 days</p>
<p>SR 3.6.8.3 -----NOTE----- Not required to be met for automatic isolation valve(s) in penetrations closed to comply with LCO 3.6.8.d.1. ----- Verify one automatic isolation valve in each open penetration providing direct access from the containment atmosphere to the outside atmosphere actuates to the isolation position on an actual or simulated actuation signal.</p>	<p>24 months</p>

3.6 CONTAINMENT SYSTEMS

3.6.9 pH Adjustment

LC0 3.6.9 The pH adjustment baskets shall contain \geq [560 ft³] of trisodium phosphate (TSP).

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The volume of trisodium phosphate not within limit.	A.1 Restore volume of trisodium phosphate to within limit.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u>	6 hours
	B.2 Be in MODE 5.	84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.9.1	Verify that the pH adjustment baskets contain at least [560 ft ³] of TSP (Na ₃ PO ₄ -12 H ₂ O).	24 months
SR 3.6.9.2	Verify that a sample from the pH adjustment baskets provides adequate pH adjustment of the post-accident water.	24 months

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

LCO 3.7.1 The MSSVs shall be OPERABLE as specified in Table 3.7.1-1 and Table 3.7.1-2.

APPLICABILITY: MODES 1, 2, 3,
MODE 4 with the RCS not being cooled by the RNS.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each MSSV.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required MSSVs inoperable.	<p>A.1 Reduce THERMAL POWER to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs.</p> <p><u>AND</u></p> <p>-----NOTE----- Only required in MODE 1. -----</p>	4 hours
	A.2 Reduce the Power Range Neutron Flux - High reactor trip setpoint to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs.	36 hours

B. Required Action
and associated
Completion Time
not met.

OR

One or more steam
generators with
 ≥ 3 MSSVs
inoperable.

B.1 Be in MODE 3.

AND

B.2 Be in MODE 4 with the
RCS cooling provided by
the RNS.

6 hours

24 hours

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	<p>-----NOTE----- Only required to be performed in MODES 1 and 2. -----</p> <p>Verify each required MSSV lift setpoint per Table 3.7.1-2 in accordance with the Inservice Testing Program. Following testing, lift settings shall be within $\pm 1\%$.</p>	In accordance with the Inservice Testing Program

Table 3.7.1-1 (Page 1 of 1)

OPERABLE MSSVs versus Maximum Allowable Power

NUMBER OF OPERABLE MSSVs PER STEAM GENERATOR	MAXIMUM ALLOWABLE POWER (% RTP)
5	[82]
4	[65]
3	[48]
2	[31]

Table 3.7.1-2 (Page 1 of 1)
Main Steam Safety Valve Lift Settings

VALVE NUMBER		LIFT SETTING (psig ± 1%)
#1	#2	
V030A	V030B	1185
V031A	V031B	1191
V032A	V032B	1198
V033A	V033B	1204
V034A	V034B	1211
V035A	V035B	1217

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs)

LCO 3.7.2 The minimum combination of valves required for steam flow isolation shall be OPERABLE.

APPLICABILITY: MODE 1,
 MODES 2, 3, and 4 except when steam flow is isolated.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MSIV inoperable in MODE 1.	A.1 Restore valve to OPERABLE status.	8 hours
B. One or more of the turbine stop valves and its associated turbine control valve, turbine bypass valves, or moisture separator reheat supply steam control valves inoperable in MODE 1.	B.1 Restore valve to OPERABLE status.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Two MSIVs inoperable in MODE 1.</p> <p><u>OR</u></p> <p>One MSIV inoperable and one or more of the turbine stop valves and its associated turbine control valve, all turbine bypass valves, or moisture separator reheat supply steam control valves inoperable in MODE 1.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition A or B not met.</p>	<p>C.1 Be in MODE 2.</p>	<p>6 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. One or two MSIVs inoperable in MODE 2, 3, or 4.</p> <p>-----NOTE----- Separate Condition entry is allowed for each MSIV. -----</p> <p><u>OR</u></p> <p>One or more of the turbine stop valves and its associated turbine control valve, all turbine bypass valves, or moisture separator reheat supply steam control valves inoperable in MODE 2, 3, or 4.</p>	<p>D.1 Isolate associated steam flow path.</p> <p><u>AND</u></p> <p>D.2 Verify flow path remains closed.</p>	<p>8 hours</p> <p>Once per 7 days</p>
<p>E. Required Action and associated Completion Time of Condition D not met.</p>	<p>E.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.2 Be in MODE 4 with the RCS cooling provided by the RNS.</p>	<p>6 hours</p> <p>24 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.1 -----NOTE----- Only required to be performed prior to entry into MODE 2. -----</p> <p>Verify MSIV closure time \leq 5 seconds on an actual or simulated actuation signal.</p>	<p>In accordance with the Inservice Testing Program</p>
<p>SR 3.7.2.2 -----NOTE----- Only required to be performed prior to entry into MODE 2. -----</p> <p>Verify turbine stop, turbine control, turbine bypass, and moisture separator reheat supply steam control valves' closure time \leq 5 seconds on an actual or simulated actuation signal.</p>	<p>In accordance with the Inservice Testing Program</p>

Main Feedwater Isolation and Control Valves (MFIV and MFCV)
3.7.3

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Isolation and Control Valves (MFIV and MFCV)

LCO 3.7.3 The MFIV and the MFCV for each Steam Generator shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4 except when the MFIVs or associated MFCV are closed and deactivated.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two MFIVs inoperable.	A.1 Close or isolate the MFIV flow path.	72 hours
	<u>AND</u> A.2 Verify MFIV is closed or isolated.	Once per 7 days
B. One or two MFCVs inoperable.	B.1 Close or isolate the MFCV the flow path.	72 hours
	<u>AND</u> B.2 Verify MFCV is closed or isolated.	Once per 7 days
C. Two valves in the same flow path inoperable.	C.1 Isolate affected flow path.	8 hours

(continued)

Main Feedwater Isolation and Control Valves (MFIV and MFCV)
3.7.3

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	D.2 Be in MODE 4 with the RCS cooling provided by the RNS.	24 hours
	<u>AND</u>	
	D.3.1 Isolate the affected flow path(s).	36 hours
	<u>OR</u>	
	D.3.2 Be in Mode 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.3.1 -----NOTE----- Only required to be performed prior to entry into MODE 2. -----</p> <p>Verify the closure time of each MFIV and MFCV is \leq 5 seconds on an actual or simulated actuation signal.</p>	In accordance with the Inservice Testing Program

3.7 PLANT SYSTEMS

3.7.4 Secondary Specific Activity

LC0 3.7.4 The specific activity of the secondary coolant shall be
 $\leq 0.1 \mu\text{Ci/gm}$ DOSE EQUIVALENT I-131.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Specific activity not within limit.	A.1 Be in MODE 3.	6 hours
	<u>AND</u> A.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.4.1 Verify the specific activity of the secondary coolant $\leq 0.1 \mu\text{Ci/gm}$ DOSE EQUIVALENT I-131.	31 days

3.7 PLANT SYSTEMS

3.7.5 Spent Fuel Pool Water Level

LC0 3.7.5 The spent fuel pool water level shall be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: At all times.

ACTIONS

-----NOTE-----
LC0s 3.0.3 and 3.0.8 are not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Spent fuel pool water level < 23 ft.	A.1 Suspend movement of irradiated fuel assemblies in the spent fuel pool.	Immediately
	<u>AND</u> A.2 Initiate action to restore water level to ≥ 23 ft.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	Verify the spent fuel pool water level is ≥ 23 ft above the top of the irradiated fuel assemblies seated in the storage racks.	7 days

3.7 PLANT SYSTEMS

3.7.6 Main Control Room Habitability System (VES)

LCO 3.7.6 The Main Control Room (MCR) Habitability System shall be OPERABLE.

-----NOTE-----
The MCR boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, and 4,
During movement of irradiated fuel assemblies.

ACTIONS

-----NOTE-----
LCO 3.0.8 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One VES valve or damper inoperable.	A.1 Restore VES valve or damper to OPERABLE status.	7 days
B. MCR air temperature not within limit.	B.1 Restore MCR air temperature to within limit.	24 hours
C. Loss of integrity of MCR pressure boundary.	C.1 Restore MCR pressure boundary to OPERABLE status.	24 hours
D. Required Action and associated Completion Time of Conditions A, B, or C not met in MODE 1, 2, 3, or 4.	D.1 Be in MODE 3. <u>AND</u> D.2 Be in MODE 5.	6 hours 36 hours

E. Required Action
and associated
Completion Time of
Conditions A, B,
or C not met during
movement of
irradiated fuel.

E.1 Suspend movement of
irradiated fuel
assemblies.

Immediately

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. VES inoperable in MODE 1, 2, 3, or 4.	F.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	F.2 Be in MODE 4.	12 hours
	<u>AND</u>	
	F.3 Restore VES to OPERABLE status.	36 hours
G. VES inoperable during movement of irradiated fuel.	G.1 Suspend movement of irradiated fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify Main Control Room air temperature is $\leq 75^{\circ}\text{F}$.	24 hours
SR 3.7.6.2	Verify that the compressed air storage tanks are pressurized to $[\geq 3400 \text{ psig}]$.	24 hours
SR 3.7.6.3	Verify that each VES air delivery isolation valve is OPERABLE.	In accordance with the Inservice Testing Program
SR 3.7.6.4	Verify that each VES air header manual isolation valve is in an open position.	31 days
SR 3.7.6.5	Verify that the air quality of the air storage tanks meets the requirements of Appendix C, Table C-1 of ASHRAE Standard 62.	92 days
SR 3.7.6.6	Verify that all VBS Main Control Room isolation valves are OPERABLE and will close upon receipt of an actual or simulated actuation signal.	24 months
SR 3.7.6.7	Verify that each VES pressure relief isolation valve within the MCR pressure boundary is OPERABLE.	In accordance with the Inservice Testing Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.6.8	Verify that each VES pressure relief damper is OPERABLE.	24 months
SR 3.7.6.9	Verify that the self contained pressure regulating valve in each VES air delivery flow path is OPERABLE.	In accordance with the Inservice Testing Program
SR 3.7.6.10	Verify that one VES air delivery flow path maintains a 1/8 inch water gauge positive pressure in the MCR envelope relative to the adjacent areas at the required air addition flow rate of 65 ± 5 scfm using the safety related compressed air emergency air storage tanks.	24 months

3.7 PLANT SYSTEMS

3.7.7 Startup Feedwater Isolation and Control Valves

LC0 3.7.7 Both Startup Feedwater Isolation Valves and Control Valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4 except when the startup feedwater flow paths are isolated.

ACTIONS

- NOTES-----
1. Flow paths may be unisolated intermittently under administrative controls.
 2. Separate Condition entry is allowed for each flow path.
-

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more flow paths with one inoperable valve.	A.1 Isolate the affected flow path(s).	72 hours
	<u>AND</u> A.2 Verify affected flow path(s) is isolated.	Once per 7 days
B. One flow path with two inoperable valves.	B.1 Isolate the affected flow path.	8 hours

(continued)

Startup Feedwater Isolation and Control Valves
3.7.7

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	C.2 Be in MODE 4 with the RCS cooling provided by the RNS.	24 hours
	<u>AND</u>	
	C.3 Isolate the affected flow path(s).	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.7.1 Verify both startup feedwater isolation and control valves are OPERABLE.	In accordance with the Inservice Testing Program

3.7 PLANT SYSTEMS

3.7.8 Main Steam Line Leakage

LC0 3.7.8 Main Steam Line leakage through the pipe walls inside containment shall be limited to 0.5 gpm.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Main Steam Line leakage exceeds operational limit.	A.1 Be in MODE 3.	6 hours
	<u>AND</u> A.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	Verify main steam line leakage into the containment sump ≤ 0.5 gpm.	Per SR 3.4.8.1

3.7 PLANT SYSTEMS

3.7.9 Fuel Storage Pool Makeup Water Sources

LCO 3.7.9 Fuel storage pool makeup water source shall be OPERABLE.

- NOTES-----
1. OPERABILITY of the cask washdown pit is required when the calculated spent fuel storage pool decay heat ≥ 4.6 MWt and ≤ 5.4 MWt.
 2. OPERABILITY of the passive containment cooling water source is required when the calculated spent fuel storage pool decay heat > 5.4 MWt.
-

APPLICABILITY: During storage of fuel in the fuel storage pool with a calculated decay heat ≥ 4.6 MWt.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required fuel storage pool makeup water source inoperable.	-----NOTE----- LCOs 3.0.3 and 3.0.8 are not applicable. -----	Immediately
	A.1 Initiate action to restore the required makeup water source to OPERABLE status.	

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Verify the passive containment cooling system water storage tank volume is $\geq 400,000$ gallons.	7 days
SR 3.7.9.2	Verify the water level in the cask washdown pit is ≥ 13.75 ft.	30 days
SR 3.7.9.3	Verify the spent fuel storage pool makeup isolation valves PCS-PL-V009, PCS-PL-V045, PCS-PL-V051, SFS-PL-V066 and SFS-PL-V068 are OPERABLE in accordance with the Inservice Testing Program.	In accordance with the Inservice Testing Program

3.7 PLANT SYSTEMS

3.7.10 Steam Generator Isolation Valves

LC0 3.7.10 The steam generator isolation valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
 MODE 4 with the RCS not being cooled by the RNS.

- NOTES-----
1. Steam generator blowdown flow path(s) may be unisolated intermittently under administrative controls.
 2. Separate Condition entry is allowed for each flow path.
-

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more PORV flow paths with one SG isolation valve inoperable.	A.1 Isolate the flow path by use of at least one closed and deactivated automatic valve.	72 hours
B. One or more blowdown flow paths with one SG isolation valve inoperable.	B.1 Isolate the flow path by one closed valve.	72 hours
	<u>AND</u> B.2 Verify that the affected SG blowdown flow path is isolated.	Once per 7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more PORV flow paths with two SG isolation valves inoperable.	C.1 Isolate the affected flow path by use of at least one closed and deactivated automatic valve.	8 hours
D. One or more blowdown flow paths with two SG isolation valves inoperable.	D.1 Isolate the flow path by one closed valve. <u>AND</u> D.2 Verify that the affected SG blowdown flow path is isolated.	8 hours Once per 7 days
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3. <u>AND</u> E.2 Be in MODE 4 with the RCS cooling provided by the RNS.	6 hours 24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Verify each steam generator isolation valve (PORV block valves (SGS-PL-V027A & B), PORVs (SGS-PL-V233A & B), and blowdown isolation valves (SGS-PL-V074A & B and SGS-PL-V075A & B)) is OPERABLE by stroking the valve closed.	In accordance with the Inservice Testing Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 DC Sources – Operating

LC0 3.8.1 The Division A, B, C, and D Class 1E DC power subsystems shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more battery chargers in one division inoperable.	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	6 hours
	<u>AND</u>	
	A.2 Verify battery float current \leq [5] amps.	Once per 24 hours
	<u>AND</u>	
	A.3 Restore battery charger[s] to OPERABLE status.	7 days

B. One or more battery chargers in two divisions inoperable.	B.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	<u>AND</u>	
	B.2 Verify battery float current \leq [5] amps.	Once per 24 hours
	<u>AND</u>	
	B.3 Restore battery charger[s] to OPERABLE status.	7 days
C. One or more batteries in one division inoperable.	C.1 Restore batteries to OPERABLE status.	6 hours
D. One or more batteries in two divisions inoperable.	D.1 Restore batteries to OPERABLE status.	2 hours
E. One DC electrical power subsystem inoperable for reasons other than Condition A or C.	E.1 Restore DC electrical power subsystem to OPERABLE status.	6 hours
F. Two DC electrical power subsystems inoperable for reasons other than B or D.	F.1 Restore DC electrical power subsystem to OPERABLE status.	2 hours

G. Required Action
and associated
Completion Time
not met.

G.1 Be in MODE 3.

6 hours

AND

G.2 Be in MODE 5.

36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.1.1 Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	7 days
SR 3.8.1.2 Verify each battery charger supplies \geq [400] amps at greater than or equal to the minimum established float voltage for \geq [8] hours. <u>OR</u> Verify each battery charger can recharge the battery to the fully charged state within [24] hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.3 -----NOTES-----</p> <ol style="list-style-type: none"> 1. The modified performance discharge test in SR 3.8.7.6 may be performed in lieu of SR 3.8.1.3. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4 unless the spare battery is connected to replace the battery being tested. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. <p>-----</p> <p>Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.</p>	<p>24 months</p>

Page 3.8-4 intentionally blank.

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 DC Sources – Shutdown

LCO 3.8.2 DC electrical power subsystems shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.6, "Distribution Systems – Shutdown."

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

-----NOTE-----
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required DC electrical power subsystems inoperable.	A.1 Declare affected required features inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u>	
	A.2.3 Suspend operations with a potential for draining the reactor vessel.	Immediately
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.4 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	<p><u>AND</u></p> <p>A.2.5 Initiate action to restore required DC electrical power subsystems to OPERABLE status.</p>	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.2.1 -----NOTE-----</p> <p>The following SRs are not required to be performed: SR 3.8.1.2 and SR 3.8.1.3.</p> <p>-----</p> <p>For DC sources required to be OPERABLE, the following SRs are applicable:</p> <p>SR 3.8.1.1 SR 3.8.1.2 SR 3.8.1.3</p>	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Inverters – Operating

LC0 3.8.3 The Division A, B, C, and D inverters (Divisions A and D, one each and Divisions B and C two each; six total) shall be OPERABLE.

-----NOTES-----

One inverter may be disconnected from its associated DC bus for ≤ 72 hours to perform an equalizing charge on its associated battery, providing:

1. The associated instrument and control bus is energized from its Class 1E constant voltage source transformer; and
 2. All other AC instrument and control buses are energized from their associated OPERABLE inverters.
-

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One inverter inoperable.	<p>A.1 -----NOTE----- Enter applicable Conditions and Required Actions of LC0 3.8.5 "Distribution Systems – Operating" with any instrument and control bus de-energized. -----</p> <p>Restore inverter to OPERABLE status.</p>	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.3.1 Verify correct inverter voltage, frequency, and alignment to required AC instrument and control buses.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 Inverters – Shutdown

LCO 3.8.4 Inverters shall be OPERABLE to support the onsite Class 1E power distribution subsystems required by LCO 3.8.6, "Distribution Systems – Shutdown."

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

-----NOTE-----
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required inverters inoperable.	A.1 Declare affected required features inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u>	
	A.2.3 Suspend operations with a potential for draining the reactor vessel.	Immediately
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.4 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	<u>AND</u> A.2.5 Initiate action to restore required inverters to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.4.1 Verify correct inverter voltage, frequency, and alignments to required AC instrument and control buses.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 Distribution Systems – Operating

LCO 3.8.5 The Division A, B, C, and D AC instrument and control bus and DC electrical power distribution subsystems shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Division AC instrument and control bus inoperable.	A.1 Restore AC instrument and control bus to OPERABLE status.	6 hours <u>AND</u> 12 hours from discovery of failure to meet the LCO
B. One Division DC electrical power distribution subsystem inoperable.	B.1 Restore DC electrical power distribution subsystem to OPERABLE status.	6 hours <u>AND</u> 12 hours from discovery of failure to meet the LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two Divisions AC instrument and control bus inoperable.	C.1 Restore AC instrument and control bus to OPERABLE status.	2 hours <u>AND</u> 16 hours from discovery of failure to meet the LCO.
D. Two Divisions DC electrical power distribution subsystem inoperable.	D.1 Restore DC electrical power distribution subsystem to OPERABLE status.	2 hours <u>AND</u> 16 hours from discovery of failure to meet the LCO.
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3. <u>AND</u> E.2 Be in MODE 5.	6 hours 36 hours
F. Two Divisions with inoperable distribution subsystems that result in a loss of safety function.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	Verify correct breaker and switch alignments and voltage to required DC and AC instrument and control bus electrical power distribution subsystems.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Distribution Systems – Shutdown

LCO 3.8.6 The necessary portions of DC and AC instrument and control bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

-----NOTE-----
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required DC or AC instrument and control bus electrical power distribution subsystems inoperable.	A.1 Declare associated supported required features inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u>	
	A.2.3 Initiate action to suspend operations with a potential for draining the reactor vessel.	Immediately
	<u>AND</u>	

	<p>A.2.4 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.</p> <p><u>AND</u></p>	<p>Immediately</p> <p>(continued)</p>
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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.5 Initiate actions to restore required DC and AC instrument and control bus electrical power distribution subsystems to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.6.1 Verify correct breaker and switch alignments and voltage to required DC and AC instrument and control bus electrical power distribution subsystems.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Battery Parameters

LCO 3.8.7 Battery Parameters for Division A, B, C, and D batteries shall be within limits.

APPLICABILITY: When associated DC electrical power sources are required to be OPERABLE.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each battery.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more batteries in one division with one or more battery cells float voltage < [2.07] V.	A.1 Perform SR 3.8.1.1.	2 hours
	<u>AND</u>	
	A.2 Perform SR 3.8.7.1.	2 hours
	<u>AND</u>	
	A.3 Restore affected cell voltage \geq [2.07] V.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more batteries in one division with float current > [5] amps.	B.1 Perform SR 3.8.1.1	2 hours
	<u>AND</u> B.2 Restore battery float current to \leq [5] amps.	24 hours
<p>-----NOTE----- Required Action C.2 shall be completed if electrolyte level was below the top of plates. -----</p>	<p>-----NOTE----- Required Actions C.1 and C.2 are only applicable if electrolyte level was below the top of plates. -----</p>	
C. One or more batteries in one division with one or more cells electrolyte level less than minimum established design limits.	C.1 Restore electrolyte level to above top of plates.	8 hours
	<u>AND</u> C.2 Verify no evidence of leakage.	12 hours
	<u>AND</u> C.3 Restore electrolyte level to greater than or equal to minimum established design limits.	31 days

D. One or more batteries in one division with pilot cell electrolyte temperature less than minimum established design limits.	D.1 Restore battery pilot cell temperature to greater than or equal to minimum established design limits.	12 hours
E. One or more batteries in two or more divisions with battery parameters not within limits.	E.1 Restore battery parameters for batteries in three divisions to within limits.	2 hours
F. Required Action and associated Completion Time not met. <u>OR</u> One or more batteries in one division with one or more battery cells float voltage < [2.07] V and float current > [5] amps.	F.1 Declare associated battery inoperable.	Immediately

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	<p>-----NOTE-----</p> <p>Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.1.1.</p> <p>-----</p> <p>Verify each battery float current is $\leq [5]$ amps.</p>	7 days
SR 3.8.7.2	Verify each battery pilot cell voltage is $\geq [2.07]$ V.	31 days
SR 3.8.7.3	Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.	31 days
SR 3.8.7.4	Verify each battery pilot cell temperature is greater than or equal to minimum established design limits.	31 days
SR 3.8.7.5	Verify each battery connected cell voltage is $\geq [2.07]$ V.	92 days

SR 3.8.7.6

-----NOTE-----
This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR.

Verify battery capacity is \geq [80%] of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.

60 months

AND

12 months when battery shows degradation, or has reached [85]% of the expected life with capacity < 100% of manufacturer's rating

AND

24 months when battery has reached [85]% of the expected life with capacity \geq 100% of manufacturer's rating

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Table 3.8.7-1 not used.