

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, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more steam generators with one MSSV inoperable and the Moderator Temperature Coefficient (MTC) zero or negative at all power levels.	A.1 Reduce THERMAL POWER to < 50 % RTP.	4 hours

(continued)

SURVEILLANCE REQUIREMENTS

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

Table 3.7.1-1 (page 1 of 1)
OPERABLE Main Steam Safety Valves versus
Maximum Allowable Power

NUMBER OF OPERABLE MSSVs PER STEAM GENERATOR	MAXIMUM ALLOWABLE POWER (% RTP)
3	≤ 46
2	≤ 24

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

VALVE NUMBER			LIFT SETTING (psig ± 3%)
<u>STEAM GENERATOR</u>			
A	B	C	
SV1-1A	SV1-1B	SV1-1C	1085
SV1-2A	SV1-2B	SV1-2C	1110
SV1-3A	SV1-3B	SV1-3C	1125
SV1-4A	SV1-4B	SV1-4C	1140

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3.7.2 Main Steam Isolation Valves (MSIVs)

LCO 3.7.2 Three MSIVs shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MSIV inoperable in MODE 1.	A.1 Restore MSIV to OPERABLE status.	24 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 2.	6 hours
C. -----NOTE----- Separate Condition entry is allowed for each MSIV. ----- One or more MSIVs inoperable in MODE 2 or 3.	C.1 Close MSIV. <u>AND</u> C.2 Verify MSIV is closed.	8 hours Once per 7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Be in MODE 3.	6 hours
	<u>AND</u> D.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.2.1 -----NOTE----- Only required to be performed in MODES 1 and 2. ----- Verify closure time of each MSIV is ≤ 5 seconds on an actual or simulated actuation signal.	In accordance with the Inservice Testing Program

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3.7.3 Main Feedwater Isolation Valves (MFIVs), Main Feedwater Regulation Valves (MFRVs), and Bypass Valves

LCO 3.7.3 Three MFIVs, three MFRVs, and three bypass valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3 except when MFIV, MFRV, or bypass valve is closed or isolated by a closed manual valve.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more MFIVs inoperable.	A.1 Close or isolate MFIV.	72 hours
	<u>AND</u> A.2 Verify MFIV is closed or isolated.	Once per 7 days
B. One or more MFRVs inoperable.	B.1 Close or isolate MFRV.	72 hours
	<u>AND</u> B.2 Verify MFRV is closed or isolated.	Once per 7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more bypass valves inoperable.	C.1 Close or isolate bypass valve.	8 hours
	<u>AND</u> C.2 Verify bypass valve is closed or isolated.	Once per 7 days
D Two valves in the same flow path inoperable.	D.1 Isolate affected flow path.	8 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3.	6 hours
	<u>AND</u> E.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.3.1 Verify the closure time of each MFRV and bypass valve is ≤ 20 seconds on an actual or simulated actuation signal.	In accordance with the Inservice Testing Program
SR 3.7.3.2 Verify the closure time of each MFIV is ≤ 50 seconds on an actual or simulated actuation signal.	In accordance with the Inservice Testing Program

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3.7.4 Auxiliary Feedwater (AFW) System

LCO 3.7.4 Four AFW flow paths and three AFW pumps shall be OPERABLE.

-----NOTE-----
Only one AFW flow path with one motor driven pump is required to be OPERABLE in MODE 4.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is being used for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One AFW pump inoperable in MODE 1, 2, or 3.</p> <p><u>OR</u></p> <p>One or two AFW flow paths inoperable in MODE 1, 2, or 3.</p>	<p>A.1 Restore AFW pump or flow path(s) to OPERABLE status.</p>	<p>7 days</p> <p><u>AND</u></p> <p>8 days from discovery of failure to meet the LCO</p>
<p>B. Two motor driven AFW pumps inoperable in MODE 1, 2, or 3.</p> <p><u>OR</u></p> <p>Three motor driven AFW flow paths inoperable in MODE 1, 2, or 3.</p>	<p>B.1 Restore one motor driven AFW pump or one flow path to OPERABLE status.</p>	<p>24 hours</p> <p><u>AND</u></p> <p>8 days from discovery of failure to meet the LCO</p>

(continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Required Action and associated Completion Time for Condition A or B not met.</p>	<p>C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4.</p>	<p>6 hours 18 hours</p>
<p>D. Steam driven AFW pump or flow path inoperable in MODE 1, 2, or 3. <u>AND</u> One motor driven AFW pump or flow path inoperable in MODE 1, 2, or 3.</p>	<p>D.1 Be in MODE 3. <u>AND</u> D.2 Be in MODE 4.</p>	<p>6 hours 18 hours</p>
<p>E. Four AFW flow paths inoperable in MODE 1, 2, or 3. <u>OR</u> Three AFW pumps inoperable in MODE 1, 2, or 3.</p>	<p>E.1NOTE..... LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one AFW pump and flow path are restored to OPERABLE status. Initiate action to restore one AFW pump and flow path to OPERABLE status.</p>	<p>Immediately</p>
<p>F. Required AFW pump and flow path inoperable in MODE 4.</p>	<p>F.1 Initiate action to restore AFW pump and flow path to OPERABLE status.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.4.1 Verify each AFW manual, power operated, and automatic valve in each water flow path, and in the steam supply flow path to the steam driven AFW pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	<p>31 days</p>
<p>SR 3.7.4.2 -----NOTE----- Not required to be performed for the steam driven AFW pump until 24 hours after ≥ 1000 psig in the steam generator. ----- Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.</p>	<p>31 days on a STAGGERED TEST BASIS</p>
<p>SR 3.7.4.3 -----NOTE----- Not applicable in MODE 4 when steam generator is being used for heat removal. ----- Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.</p>	<p>18 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.7.4.4 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Not required to be performed for the steam driven AFW pump until 24 hours after \geq 1000 psig in the steam generator. 2. Not applicable in MODE 4 when steam generator is being used for heat removal. <p>-----</p> <p>Verify each AFW pump starts automatically on an actual or simulated actuation signal.</p>	<p>18 months</p>
<p>SR 3.7.4.5 -----NOTE-----</p> <p>Not required to be performed for the steam driven AFW pump until prior to entering MODE 1.</p> <p>-----</p> <p>Verify proper alignment of the required AFW flow paths by verifying flow from the condensate storage tank to each steam generator.</p>	<p>Prior to entering MODE 2, whenever unit has been in MODE 5 or 6 for > 30 days</p>
<p>SR 3.7.4.6 Verify the AFW automatic bus transfer switch associated with discharge valve V2-16A operates automatically on an actual or simulated actuation signal.</p>	<p>18 months</p>

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3.7.5 Condensate Storage Tank (CST)

LC0 3.7.5 The CST level shall be $\geq 35,000$ gal and the backup Service Water System (SWS) supply to the AFW system shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when a steam generator is being used for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CST level not within limit.	A.1 Verify by administrative means OPERABILITY of backup water supply.	4 hours <u>AND</u> Once per 12 hours thereafter
	<u>AND</u> A.2 Restore CST level to within limit.	24 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 4, without reliance on steam generator for heat removal.	18 hours

(continued)

ACTIONS (Continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. SWS supply to AFW system inoperable.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4, without reliance on steam generator for heat removal.	18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.5.1 Verify the CST level is \geq 35,000 gal.	12 hours
SR 3.7.5.2 Verify by administrative means OPERABILITY of backup SWS supply to the AFW System.	31 days

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3.7.6 Component Cooling Water (CCW) System

LCO 3.7.6 Two CCW trains powered from emergency power supplies shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required CCW train inoperable.	<p>A.1</p> <p>-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by CCW. -----</p> <p>Restore required CCW train to OPERABLE status.</p>	72 hours
B. Required Action and associated Completion Time of Condition A 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
<p>SR 3.7.6.1 -----NOTE----- Isolation of CCW flow to individual components does not render the CCW System inoperable. -----</p> <p>Verify each required CCW manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	<p>31 days</p>
<p>SR 3.7.6.2 Verify each required CCW pump starts automatically on an actual or simulated LOP DG Start undervoltage signal.</p>	<p>18 months</p>

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3.7.7 Service Water System (SWS)

LCO 3.7.7 Two SWS trains and the Turbine Building loop isolation valves shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SWS train inoperable.	<p>A.1</p> <p>.....NOTES..... Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources-Operating," for emergency diesel generator made inoperable by SWS. </p> <p>Restore SWS train to OPERABLE status.</p>	72 hours
B. One Turbine Building loop isolation valve inoperable.	<p>B.1</p> <p>Close and deactivate inoperable Turbine Building loop isolation valve.</p> <p><u>AND</u></p> <p>B.2</p> <p>Verify the inoperable Turbine Building loop isolation valve is closed and deactivated.</p>	<p>72 hours</p> <p>31 days</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two Turbine Building loop isolation valves inoperable.	C.1 Close and deactivate one inoperable Turbine Building loop isolation valve.	2 hours
D. Required Actions and associated Completion Times of Conditions A, B, or C not met.	D.1 Be in MODE 3.	6 hours
	<u>AND</u> D.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.7.1 -----NOTE----- Isolation of SWS flow to individual components does not render the SWS inoperable. ----- Verify each SWS manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.7.2 Verify each SWS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.7.7.3 Verify each SWS pump and SWS booster pump starts automatically on an actual or simulated actuation signal.	18 months
SR 3.7.7.4 Verify the SWS automatic bus transfer switch associated with Turbine Building loop isolation valve V6-16C operates automatically on an actual or simulated actuation signal.	18 months

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3.7.8 Ultimate Heat Sink (UHS)

LCO 3.7.8 The UHS shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. Service water temperature not within limit.</p>	<p>A.1 Verify required cooling capacity maintained.</p> <p><u>AND</u></p> <p>A.2 Verify service water temperature is $\leq 99^{\circ}\text{F}$.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>Once per hour</p>
<p>B. Required Action and associated Completion Time not met.</p> <p><u>OR</u></p> <p>UHS inoperable 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
<p>SR 3.7.8.1 Verify water level of UHS is ≥ 218 ft mean sea level.</p>	<p>24 hours</p>

Surveillance Requirements (continued)

SURVEILLANCE	FREQUENCY
SR 3.7.8.2 Verify service water temperature is # 97EF.	24 hours

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3.7.9 Control Room Emergency Filtration System (CREFS)

LCO 3.7.9 Two CREFS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREFS train inoperable.	A.1 Restore CREFS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours
C. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies.	C.1 Place OPERABLE CREFS train in emergency pressurization mode.	Immediately
	<u>OR</u> C.2 Suspend movement of irradiated fuel assemblies.	Immediately

(continued)

ACTIONS (continued)

D. Two CREFS trains inoperable during movement of irradiated fuel assemblies.	D.1	Suspend movement of irradiated fuel assemblies.	Immediately
E. Two CREFS trains inoperable in MODE 1, 2, 3, or 4.	E.1	Restore at least one CREFS train to OPERABLE status.	48 hours
F. Required Action and associated Completion Time of Condition E not met in MODE 1, 2, 3, or 4.	F.1	Be in MODE 3.	6 hours
	F.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Operate each CREFS train for \geq 15 minutes.	31 days
SR 3.7.9.2	Perform required CREFS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.9.3	Verify each CREFS train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.9.4	Verify one CREFS train can maintain a positive pressure of \geq 0.125 inches water gauge, relative to the outside atmosphere and a positive pressure relative to adjacent building areas during the emergency pressurization mode of operation at a makeup flow rate of \leq 400 cfm.	18 months on a STAGGERED TEST BASIS

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3.7.10 Control Room Emergency Air Temperature Control (CREATC)

LCO 3.7.10 Two CREATC Water Cooled Condensing Unit (WCCU) trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREATC WCCU train inoperable.	A.1 Restore CREATC WCCU train to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.10.1 Verify each CREATC WCCU train has the capability to remove the assumed heat load.	18 months

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3.7.11 Fuel Building Air Cleanup System (FBACS)

LCO 3.7.11 The FBACS shall be OPERABLE and operating.

APPLICABILITY: During movement of irradiated fuel assemblies in the fuel building.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The FBACS inoperable during movement of irradiated fuel assemblies in the fuel building.	A.1 Suspend movement of irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.11.1 Operate the FBACS for ≥ 10 continuous hours with the heaters operating automatically.	31 days
SR 3.7.11.2 Perform required FBACS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.7.11.3NOTE..... Not required to be met when the only movement of irradiated fuel is movement of the spent fuel shipping cask containing irradiated fuel. Verify the FBACS can maintain a negative pressure with respect to atmospheric pressure.</p>	<p>18 months</p>

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3.7.12 Fuel Storage Pool Water Level

LCO 3.7.12 The fuel storage pool water level shall be \geq 21 ft over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: During movement of irradiated fuel assemblies in the fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel storage pool water level not within limit.	A.1NOTE..... LCO 3.0.3 is not applicable. Suspend movement of irradiated fuel assemblies in the fuel storage pool.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.12.1 Verify the fuel storage pool water level is \geq 21 ft above the top of the irradiated fuel assemblies seated in the storage racks.	7 days

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3.7.13 Fuel Storage Pool Boron Concentration

LC0 3.7.13 The fuel storage pool boron concentration shall be
 \$ 1500 ppm.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel storage pool boron concentration not within limit.	-----NOTE----- LC0 3.0.3 is not applicable. -----	Immediately
	A.1 Suspend movement of fuel assemblies in the fuel storage pool.	
	<u>AND</u>	
	A.2 Initiate action to restore fuel storage pool boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.13.1 Verify the fuel storage pool boron concentration is within limit.	7 days

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3.7.14 New and Spent Fuel Assembly Storage

LCO 3.7.14 New and spent fuel shall be stored in approved locations.

APPLICABILITY: Whenever any fuel assembly is stored in the new or spent fuel storage racks.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	<p>A.1</p> <p>-----NOTE----- LCO 3.0.3 is not applicable. -----</p> <p>Initiate action to restore fuel storage to within requirements.</p>	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.14.1 Verify by administrative means that fuel assemblies are stored in approved locations.	Prior to storing the fuel assembly

3.7 PLANT SYSTEMS

3.7.15 Secondary Specific Activity

LCO 3.7.15 The specific activity of the secondary coolant shall be $\leq 0.10 \mu\text{Ci/gm}$ 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 3.7.15.1 Verify the specific activity of the secondary coolant is $\leq 0.10 \mu\text{Ci/gm}$ DOSE EQUIVALENT I-131.	31 days