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CHAPTER 3.6

CONTAINMENT SYSTEMS

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3.6 CONTAINMENT SYSTEMS

3.6.1 Containment

LCO 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
SR 3.6.1.2	Verify containment structural integrity in accordance with the Containment Tendon Surveillance Program.	In accordance with the Containment Tendon Surveillance Program

3.6 CONTAINMENT SYSTEMS

3.6.2 Containment Air Locks

LCO 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 **LCO 3.6.1**, "Containment," when air lock leakage results in exceeding the overall containment leakage rate.
-

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment air locks with one containment air lock door inoperable.	<p>----- NOTE -----</p> <ol style="list-style-type: none"> 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. 	1 hour
	<p>A.1 Verify the OPERABLE door is closed in the affected air lock.</p> <p><u>AND</u></p>	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Lock the OPERABLE door closed in the affected air lock.	24 hours
	<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>----- NOTE -----</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>-----</p>	
	<p>B.1 Verify an OPERABLE door is closed in the affected air lock.</p> <p><u>AND</u></p>	1 hour
	<p>B.2 Lock an OPERABLE door closed in the affected air lock.</p> <p><u>AND</u></p>	24 hours
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	<p>B.3</p> <p>----- 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</p> <p>Initiate action to evaluate overall containment leakage rate per LCO 3.6.1.</p> <p><u>AND</u></p> <p>C.2</p> <p>Verify a door is closed in the affected air lock.</p> <p><u>AND</u></p> <p>C.3</p> <p>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</p> <p>Be in MODE 3.</p> <p><u>AND</u></p> <p>D.2</p> <p>Be in MODE 5.</p>	<p>6 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.1	<p>----- NOTES -----</p> <p>1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test.</p> <p>2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1.</p> <p>-----</p> <p>Perform required air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program.</p>	In accordance with the Containment Leakage Rate Testing Program
SR 3.6.2.2	Verify only one door in the air lock can be opened at a time.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

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

ACTIONS

- NOTES -----
1. Penetration flow path(s) except for containment shutdown purge valve flow paths 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 **LCO 3.6.1**, "Containment," when isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.
-

ACTIONS

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 except for containment purge valve leakage not within limit.</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>4 hours</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	<p>A.2</p> <p>----- NOTE -----</p> <p>1. Isolation devices in high radiation areas may be verified by use of administrative means.</p> <p>2. Isolation devices that are locked, sealed or otherwise secured may be verified by administrative means.</p> <p>-----</p> <p>Verify the affected penetration flow path is isolated.</p>	<p>Once per 31 days for isolation devices outside containment</p> <p><u>AND</u></p> <p>Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. ----- NOTE ----- Only applicable to penetration flow paths with two containment isolation valves. -----</p> <p>One or more penetration flow paths with two containment isolation valves inoperable except for containment purge valve leakage not within limit.</p>	<p>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.</p>	<p>1 hour</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. ----- NOTE ----- Only applicable to penetration flow paths with only one containment isolation valves and a closed system. -----</p> <p>One or more penetration flow paths with one containment isolation valve inoperable.</p>	<p>C.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.</p> <p><u>AND</u></p> <p>C.2 ----- NOTES ----- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by administrative means. ----- Verify the affected penetration flow path is isolated.</p>	<p>72 hours</p> <p>Once per 31 days</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more penetration flow paths with one or more containment purge valves not within leakage limits.	D.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve or blind flange.	24 hours
	<p><u>AND</u></p> <p>D.2 ----- NOTE -----</p> <p>1. Isolation devices in high radiation areas may be verified by use of administrative means.</p> <p>2. Isolation devices that are locked, sealed, or otherwise secured may be verified by administrative means.</p> <p>-----</p> <p>Verify the affected penetration flow path is isolated.</p>	<p>Once per 31 days for isolation devices outside containment</p> <p><u>AND</u></p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. (continued)	<u>AND</u>		Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
	D.3	Perform SR 3.6.3.6 or SR 3.6.3.7 for the resilient seal purge valves closed to comply with Required Action D.1.	Once per 92 days
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 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1	Verify each containment shutdown purge valve is sealed closed or closed and blind flange installed except for one purge valve in a penetration flow path while in Condition D of this LCO.	In accordance with the Surveillance Frequency Control Program <u>AND</u> Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
SR 3.6.3.2	Verify each containment mini-purge valve is closed, except when the containment mini-purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.3	<p>----- NOTE -----</p> <p>Valves and blind flanges in high radiation areas may be verified by use of administrative controls.</p> <p>-----</p> <p>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>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.6.3.4</p> <p>----- NOTE -----</p> <p>Valves and blind flanges in high radiation areas may be verified by use of administrative means.</p> <p>-----</p> <p>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>
<p>SR 3.6.3.5</p> <p>Verify the isolation time of each automatic power operated containment isolation valve is within limits.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>
<p>SR 3.6.3.6</p> <p>----- NOTE -----</p> <p>Only required to be performed when containment shutdown purge valve blind flanges are installed.</p> <p>-----</p> <p>Perform leakage rate testing for containment shutdown purge valves with resilient seals and associated blind flanges.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Following each reinstallation of the blind flange</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.6.3.7</p> <p>----- NOTE -----</p> <p>Only required to be performed for the containment shutdown purge valves when associated blind flanges are removed.</p> <p>-----</p> <p>Perform leakage rate testing for containment mini-purge and shutdown purge valves with resilient seals.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Within 92 days after opening the valve</p>
<p>SR 3.6.3.8</p> <p>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.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure

LCO 3.6.4 Containment pressure shall be ≥ -0.3 psig and $\leq + 1.5$ 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.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.5 Containment Air Temperature

LCO 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.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Spray and Cooling Systems

LCO 3.6.6 Two containment spray trains and two containment cooling trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	72 hours <u>AND</u> 10 days from discovery of failure to meet the LCO
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. <u>AND</u>	6 hours
	B.2 Be in MODE 5.	84 hours
C. One containment cooling train inoperable.	C.1 Restore containment cooling train to OPERABLE status.	7 days <u>AND</u> 10 days from discovery of failure to meet the LCO

(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 5.	36 hours
E. Two containment spray trains inoperable. <u>OR</u> Two containment cooling trains inoperable.	E.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	E.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.6.1</p> <p>----- NOTE -----</p> <p>Not required to be met for system vent flow paths opened under administrative control.</p> <p>-----</p> <p>Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.</p>	In accordance with the Surveillance Frequency Control Program
<p>SR 3.6.6.2</p> <p>Operate each containment cooling train fan unit for ≥ 15 minutes.</p>	In accordance with the Surveillance Frequency Control Program

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.3	Verify each containment cooling train cooling water flow rate is ≥ 2200 gpm.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.4	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.6.5	Verify each automatic containment spray 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.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.7	Verify each containment cooling train starts automatically and minimum cooling water flow rate is established on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.8	Verify each spray nozzle is unobstructed.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.9	Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.7 Recirculation Fluid pH Control (RFPC) System

LCO 3.6.7 The RFPC System shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RFPC System inoperable.	A.1 Restore RFPC System to OPERABLE status.	72 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.	84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.7.1 Verify the integrity of the RFPC System.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.7.2	Verify the RFPC System ensures an equilibrium sump pH ≥ 7.1 .	In accordance with the Surveillance Frequency Control Program