

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
	AND 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 In-service Inspection Program.	In accordance with the Containment In-service Inspection Program

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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.
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CONDITION	REQUIRED ACTION	COMPLETION TIME	
<p>A. One or more containment air locks with one containment air lock door inoperable.</p>	<p>-----NOTES-----</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. <p>-----</p>		
	<p>A.1 Verify the OPERABLE door is closed in the affected air lock.</p>		1 hour
	<p>AND</p> <p>A.2 Lock the OPERABLE door closed in the affected air lock.</p>		24 hours

(continued)

ACTIONS (continued)

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	<p>AND</p> <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>AND</p> <p>C.2 Verify a door is closed in the affected air lock.</p> <p>AND</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>AND</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 -----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 of 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 -----NOTE-----</p> <p>Only required to be performed upon entry or exit through the containment air lock.</p> <p>-----</p> <p>Verify only one door in the air lock can be opened at a time.</p>	<p>184 days</p>

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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

- NOTE-----
1. Penetration flow path(s) (except for 42 inch 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.
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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 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>AND</p>	<p>4 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	<p>A.2 -----NOTE----- Isolation devices in high radiation areas may be verified by use of administrative means. ----- Verify the affected penetration flow path is isolated.</p>	<p>Once per 31 days for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment</p>
B. -----NOTE----- Only applicable to penetration flow paths with two containment isolation valves. -----	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

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. (continued) One or more penetration flow paths with two containment isolation valves inoperable (except for purge valve leakage not within limit).</p>		
<p>C. -----NOTE----- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. ----- 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. AND C.2 -----NOTE----- Isolation devices in high radiation areas may be verified by use of administrative means. ----- Verify the affected penetration flow path is isolated.</p>	<p>4 hours Once per 31 days</p>
<p>D. One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.</p>	<p>D.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. AND</p>	<p>24 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	<p>D.2 -----NOTE----- Isolation devices in high radiation areas may be verified by use of administrative means. -----</p> <p>Verify the affected penetration flow path is isolated.</p> <p>AND</p> <p>D.3 Perform SR 3.6.3.6 for the resilient seal purge valves closed to comply with Required Action D.1.</p>	<p>Once per 31 days for isolation devices outside containment</p> <p>AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment</p> <p>Once per 92 days</p>
<p>E. Required Action and associated Completion Time not met.</p>	<p>E.1 Be in MODE 3.</p> <p>AND</p> <p>E.2 Be in MODE 5.</p>	<p>6 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.3.1 Verify each 42 inch purge valve is sealed closed, except for one purge valve in a penetration flow path while in Condition D of this LCO.</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 means. ----- 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 3.6.3.4 Verify the isolation time of each power operated and each automatic containment isolation valve is within limits.</p>	<p>In accordance with the Inservice Testing Program or 92 days</p>

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.6.3.5 Cycle each weight or spring loaded check valve testable during operation through one complete cycle of full travel, and verify each check valve remains closed when the differential pressure in the direction of flow is $\leq 0.084\text{kg/cm}^2$ (1.2 psid) and opens when the differential pressure in the direction of flow is $\geq 0.084\text{kg/cm}^2$ (1.2 psid) and $< 0.35\text{kg/cm}^2$ (5.0 psid.)</p>	<p>92 days</p>
<p>SR 3.6.3.6 Perform leakage rate testing for containment purge valves with resilient seals.</p>	<p>184 days AND Within 72 hours after each closing the valve</p>
<p>SR 3.6.3.7 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>18 months</p>
<p>SR 3.6.3.8 Cycle each weight or spring loaded check valve not testable during operation through one complete cycle of full travel, and verify each check valve remains closed when the differential pressure in the direction of flow is $\leq 0.084\text{kg/cm}^2$ (1.2 psid) and opens when the differential pressure in the direction of flow is $\geq 0.084\text{kg/cm}^2$ (1.2 psid) and $< 0.35\text{kg/cm}^2$ (5.0 psid.)</p>	<p>18 months</p>

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3.6.4 Containment Pressure

LCO 3.6.4 Containment pressure shall be $\geq -0.028\text{kg/cm}^2$ (-0.4psig) and $\leq 0.211\text{kg/cm}^2$ (3.0psig.)

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
	AND 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

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3.6.5 Containment Air Temperature

LCO 3.6.5 Containment average air temperature shall be $\leq 48.89^{\circ}\text{C}$ (120°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
	AND 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 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 AND 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. AND B.2 Be in MODE 5.	6 hours 84 hours
C. One required containment cooling train inoperable.	C.1 Restore required containment cooling train to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two required containment cooling trains inoperable.	D.1 Restore one required containment cooling train to OPERABLE status.	72 hours
E. Required Action and associated Completion Time of Condition C or D not met.	E.1 Be in MODE 3. AND E.2 Be in MODE 5.	6 hours 36 hours
F. Two containment spray trains inoperable. OR Any combination of three or more trains inoperable.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.6.1 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.	31 days
SR 3.6.6.2 Operate each required containment cooling train fan unit for ≥ 15 minutes.	31 days

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SURVEILLANCE REQUIREMENTS(continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.3	Verify each required containment cooling train cooling water flow rate is ≥ 66.24 l/s (1050 gpm).	31 days
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.	18 months
SR 3.6.6.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	18 months
SR 3.6.6.7	Verify each required containment cooling train starts automatically on an actual or simulated actuation signal.	18 months
SR 3.6.6.8	Verify each spray nozzle is unobstructed.	10 years

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3.6.7 Spray Additive System

LCO 3.6.7 The Spray Additive System shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Spray Additive System inoperable.	A.1 Restore Spray Additive System to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND B.2 Be in MODE 5.	84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.7.1 Verify each spray additive 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.	31 days
SR 3.6.7.2 Verify spray additive tank solution volume is \geq 3200 gal (72.7%) and \leq 4000 gal (90.9%).	184 days
SR 3.6.7.3 Verify spray additive tank [NaOH] solution concentration is \geq 27% and \leq 33% by weight.	184 days

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.7.4	Verify each spray additive 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
SR 3.6.7.5	Verify spray additive flow rate from each solution's flow path.	5 years

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3.6.8 Containment Hydrogen Recombiner system

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