

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.1.1 Primary Containment

LCO 3.6.1.1 Primary containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Primary containment inoperable.	A.1 Restore primary containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.1.1 Perform required visual examinations and leakage rate testing except for primary containment air lock testing, in accordance with the Primary Containment Leakage Rate Testing Program.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.1.2 Verify drywell to suppression chamber bypass leakage is equivalent to a hole $\leq 1.0$ inches in diameter.	24 months <u>AND</u> -----NOTE----- Only required after two consecutive tests fail and continues until two consecutive tests pass ----- 12 months

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.1.2 Primary Containment Air Lock

LCO 3.6.1.2 The primary containment air lock shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

- NOTES-----
1. Entry and exit is permissible to perform repairs of the air lock components.
  2. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when air lock leakage results in exceeding overall containment leakage rate acceptance criteria.
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CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One primary containment air lock door inoperable.	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Required Actions A.1, A.2, and A.3 are not applicable if both doors in the air lock are inoperable and Condition C is entered.</li> <li>2. Entry and exit is permissible for 7 days under administrative controls.</li> </ol> <p>-----</p>	1 hour
	<p>A.1 Verify the OPERABLE door is closed.</p> <p><u>AND</u></p>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Lock the OPERABLE door closed.	24 hours
	<p><u>AND</u></p> <p>A.3 -----NOTE----- Air lock doors in high radiation areas or areas with limited access due to inerting may be verified locked closed by administrative means. -----</p> <p>Verify the OPERABLE door is locked closed.</p>	Once per 31 days
B. Primary 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 air lock are inoperable and Condition C is entered.</p> <p>2. Entry into and exit from containment is permissible under the control of a dedicated individual.</p> <p>-----</p> <p>B.1 Verify an OPERABLE door is closed.</p>	1 hour
	<p><u>AND</u></p>	(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 Lock an OPERABLE door closed.	24 hours
	<p><u>AND</u></p> <p>B.3 -----NOTE----- Air lock doors in high radiation areas or areas with limited access due to inerting may be verified locked closed by administrative means. -----</p> <p>Verify an OPERABLE door is locked closed.</p>	Once per 31 days
C. Primary containment air lock inoperable for reasons other than Condition A or B.	C.1 Initiate action to evaluate primary containment overall leakage rate per LCO 3.6.1.1, using current air lock test results.	Immediately
	<p><u>AND</u></p> <p>C.2 Verify a door is closed.</p>	1 hour
	<p><u>AND</u></p> <p>C.3 Restore air lock to OPERABLE status.</p>	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. <u>AND</u>	12 hours
	D.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.2.1 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test.</li> <li>2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1.1.</li> </ol> <p>-----</p> <p>Perform required primary containment air lock leakage rate testing in accordance with the Primary Containment Leakage Rate Testing Program.</p>	<p>In accordance with the Primary Containment Leakage Rate Testing Program</p>

(continued)

**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.2.2 -----NOTE----- Only required to be performed upon entry into primary containment when the primary containment is de-inerted. ----- Verify only one door in the primary containment air lock can be opened at a time.</p>	<p>184 days</p>

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.1.3 Primary Containment Isolation Valves (PCIVs)

LCO 3.6.1.3 Each PCIV, except reactor building-to-suppression chamber vacuum breakers and scram discharge volume vent and drain valves, shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
When associated instrumentation is required to be OPERABLE per LCO 3.3.6.1, "Primary Containment Isolation Instrumentation."

#### ACTIONS

##### NOTES

1. Penetration flow paths except for purge or exhaust valve penetration 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 PCIVs.
4. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when PCIV leakage results in exceeding overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Only applicable to penetration flow paths with two PCIVs. -----</p> <p>One or more penetration flow paths with one PCIV inoperable except for MSIV 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 except for main steam line</p> <p><u>AND</u></p> <p>8 hours for main steam line</p> <p>(continued)</p>



ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	<p>A.2</p> <p>-----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>Once per 31 days for isolation devices outside primary containment</p> <p><u>AND</u></p> <p>Prior to entering MODE 2 or 3 from MODE 4, if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days, for isolation devices inside primary containment</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. -----NOTE----- Only applicable to penetration flow paths with two PCIVs. -----</p> <p>One or more penetration flow paths with two PCIVs inoperable except for MSIV 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>
<p>C. -----NOTE----- Only applicable to penetration flow paths with only one PCIV. -----</p> <p>One or more penetration flow paths with one PCIV 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>4 hours except for excess flow check valves (EFCVs)</p> <p><u>AND</u></p> <p>12 hours for EFCVs</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	<p>C.2</p> <p>-----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>Once per 31 days for isolation devices outside primary containment</p> <p><u>AND</u></p> <p>Prior to entering MODE 2 or 3 from MODE 4, if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days, for isolation devices inside primary containment</p>
D. One or more penetration flow paths with one or more MSIVs not within MSIV leakage rate limits.	<p>D.1</p> <p>Restore leakage rate to within limit.</p>	8 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition A, B, C, or D not met in MODE 1, 2, or 3.	E.1 Be in MODE 3.	12 hours
	<u>AND</u> E.2 Be in MODE 4.	36 hours
F. Required Action and associated Completion Time of Condition A, B, C, or D not met for PCIV(s) required to be OPERABLE during MODE 4 or 5.	F.1 Initiate action to suspend operations with a potential for draining the reactor vessel.	Immediately
	<u>OR</u> F.2 Initiate action to restore valve(s) to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.3.1 Verify Containment Atmospheric Dilution (CAD) System liquid nitrogen storage tank level is $\geq$ 16 inches water column.	24 hours
SR 3.6.1.3.2 Verify Safety Grade Instrument Gas (SGIG) System header pressure is $\geq$ 80 psig.	24 hours

(continued)

**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.3.3 -----NOTE-----            Not required to be met when the 6 inch or 18 inch primary containment purge and 18 inch primary containment exhaust valves are open for inerting, de-inerting, pressure control, ALARA or air quality considerations for personnel entry, or Surveillances that require the valves to be open.            -----            Verify each 6 inch and 18 inch primary containment purge valve and each 18 inch primary containment exhaust valve is closed.</p>	<p>31 days</p>
<p>SR 3.6.1.3.4 -----NOTES-----            1. Valves and blind flanges in high radiation areas may be verified by use of administrative means.            2. Not required to be met for PCIVs that are open under administrative controls.            3. Not required to be performed for test taps with a diameter <math>\leq 1</math> inch.            -----            Verify each primary containment isolation manual valve and blind flange that is located outside primary containment and is required to be closed during accident conditions is closed.</p>	<p>31 days</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.3.5 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Valves and blind flanges in high radiation areas may be verified by use of administrative means.</li> <li>2. Not required to be met for PCIVs that are open under administrative controls.</li> </ol> <p>-----</p> <p>Verify each primary containment manual isolation valve and blind flange that is located inside primary containment and is required to be closed during accident conditions is closed.</p>	<p>Prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days</p>
<p>SR 3.6.1.3.6      Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge.</p>	<p>31 days</p>
<p>SR 3.6.1.3.7      Verify each SGIG System manual valve in the flow paths servicing the 6 and 18 inch primary containment purge valves and the 18 inch primary containment exhaust valves, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	<p>31 days</p>

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.8	Verify the isolation time of each power operated and each automatic PCIV, except for MSIVs, is within limits.	In accordance with the Inservice Testing Program
SR 3.6.1.3.9	Verify the isolation time of each MSIV is $\geq 3$ seconds and $\leq 5$ seconds.	In accordance with the Inservice Testing Program
SR 3.6.1.3.10	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	24 months
SR 3.6.1.3.11	Verify a representative sample of reactor instrumentation line EFCVs actuates to the isolation position on a simulated instrument line break signal.	24 months
SR 3.6.1.3.12	Remove and test the explosive squib from each shear isolation valve of the TIP System.	24 months on a STAGGERED TEST BASIS
SR 3.6.1.3.13	Verify the CAD System supplies nitrogen to the SGIG System upon loss of the normal air supply.	24 months

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.6.1.3.14 Verify leakage rate through each MSIV is $\leq 11.5$ scfh when tested at $\geq 25$ psig.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.15 Verify each 6 inch and 18 inch primary containment purge valve and each 18 inch primary containment exhaust valve is blocked to restrict opening greater than the required maximum opening angle.	24 months
SR 3.6.1.3.16 Replace the inflatable seal of each 6 inch and 18 inch primary containment purge valve and each 18 inch primary containment exhaust valve.	96 months



### 3.6 CONTAINMENT SYSTEMS

#### 3.6.1.4 Drywell Air Temperature

LCO 3.6.1.4 Drywell average air temperature shall be  $\leq 145^{\circ}\text{F}$ .

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Drywell average air temperature not within limit.	A.1 Restore drywell average air temperature to within limit.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.4.1 Verify drywell average air temperature is within limit.	24 hours

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.1.5 Reactor Building-to-Suppression Chamber Vacuum Breakers

LCO 3.6.1.5      Each reactor building-to-suppression chamber vacuum breaker shall be OPERABLE.

APPLICABILITY:    MODES 1, 2, and 3.

#### ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each line.  
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CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more lines with one reactor building-to-suppression chamber vacuum breaker not closed.	A.1      Close the open vacuum breaker.	72 hours
B. One or more lines with two reactor building-to-suppression chamber vacuum breakers not closed.	B.1      Close one open vacuum breaker.	1 hour
C. One line with one or more reactor building-to-suppression chamber vacuum breakers inoperable for opening.	C.1      Restore the vacuum breaker(s) to OPERABLE status.	72 hours

(continued)

**ACTIONS (continued)**

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two lines with one or more reactor building-to-suppression chamber vacuum breakers inoperable for opening.	D.1 Restore all vacuum breakers in one line to OPERABLE status.	1 hour
E. Required Action and Associated Completion Time not met.	E.1 Be in MODE 3. <u>AND</u>	12 hours
	E.2 Be in MODE 4.	36 hours

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.6.1.5.1 Verify Containment Atmospheric Dilution (CAD) System nitrogen storage tank level is $\geq$ 16 inches water column.	24 hours
SR 3.6.1.5.2 Verify Safety Grade Instrument Gas (SGIG) System header pressure $\geq$ 80 psig.	24 hours

(continued)

**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE		FREQUENCY
SR 3.6.1.5.3	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Not required to be met for vacuum breakers that are open during Surveillances.</li> <li>2. Not required to be met for vacuum breakers open when performing their intended function.</li> </ol> <p>-----</p> <p>Verify each vacuum breaker is closed.</p>	14 days
SR 3.6.1.5.4	Verify each SGIG System manual valve in the flow paths servicing the reactor building-to-suppression chamber vacuum breakers, that is not locked, sealed or otherwise secured in position, is in the correct position.	31 days
SR 3.6.1.5.5	Perform a functional test of each vacuum breaker.	92 days
SR 3.6.1.5.6	Verify the setpoint for full opening of each air operated vacuum breaker is $\leq 0.75$ psid.	18 months
SR 3.6.1.5.7	Verify the CAD System supplies nitrogen to the SGIG System upon loss of normal air supply.	24 months

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.1.6 Suppression Chamber-to-Drywell Vacuum Breakers

LCO 3.6.1.6 Nine suppression chamber-to-drywell vacuum breakers shall be OPERABLE for opening.

AND

Twelve suppression chamber-to-drywell vacuum breakers shall be closed, except when performing their intended function.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required suppression chamber-to-drywell vacuum breaker inoperable for opening.	A.1 Restore one required vacuum breaker to OPERABLE status.	72 hours
B. One suppression chamber-to-drywell vacuum breaker not closed.	B.1 Close the open vacuum breaker.	10 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours
	<u>AND</u> C.2 Be in MODE 4.	36 hours

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.1	<p>-----NOTE-----                      Not required to be met for vacuum breakers that are open during Surveillances.                      -----</p> <p>Verify each vacuum breaker is closed.</p>	14 days
SR 3.6.1.6.2	Perform a functional test of each required vacuum breaker.	31 days
SR 3.6.1.6.3	Verify the setpoint for full opening of each required vacuum breaker is $\leq 0.5$ psid.	24 months

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.2.1 Suppression Pool Average Temperature

LC0 3.6.2.1 Suppression pool average temperature shall be:

- a.  $\leq 95^{\circ}\text{F}$  when any OPERABLE wide range neutron monitor (WRNM) channel is at 1.00EO % power or above and no testing that adds heat to the suppression pool is being performed;
- b.  $\leq 105^{\circ}\text{F}$  when any OPERABLE WRNM channel is at 1.00EO % power or above and testing that adds heat to the suppression pool is being performed; and
- c.  $\leq 110^{\circ}\text{F}$  when all OPERABLE WRNM channels are below 1.00EO % power.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Suppression pool average temperature $> 95^{\circ}\text{F}$ but $\leq 110^{\circ}\text{F}$ .  <u>AND</u>  Any OPERABLE WRNM at 1.00EO % power or above.  <u>AND</u>  Not performing testing that adds heat to the suppression pool.	A.1 Verify suppression pool average temperature $\leq 110^{\circ}\text{F}$ .  <u>AND</u>  A.2 Restore suppression pool average temperature to $\leq 95^{\circ}\text{F}$ .	Once per hour       24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met.	B.1 Reduce THERMAL POWER until all OPERABLE WRNM channels are below 1.00EO % power.	12 hours
C. Suppression pool average temperature > 105°F.  <u>AND</u>  Any OPERABLE WRNM at 1.00EO % power or above.  <u>AND</u>  Performing testing that adds heat to the suppression pool.	C.1 Suspend all testing that adds heat to the suppression pool.	Immediately
D. Suppression pool average temperature > 110°F but ≤ 120°F.	D.1 Place the reactor mode switch in the shutdown position.  <u>AND</u> D.2 Verify suppression pool average temperature ≤ 120°F.  <u>AND</u> D.3 Be in MODE 4	Immediately   Once per 30 minutes   36 hours

(continued)



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Suppression pool average temperature > 120°F.	E.1 Depressurize the reactor vessel to < 200 psig.	12 hours
	<u>AND</u>	
	E.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.2.1.1 Verify suppression pool average temperature is within the applicable limits.	24 hours  <u>AND</u> 5 minutes when performing testing that adds heat to the suppression pool

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.2.2 Suppression Pool Water Level

LCO 3.6.2.2      Suppression pool water level shall be  $\geq 14.5$  feet and  $\leq 14.9$  feet.

APPLICABILITY:    MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Suppression pool water level not within limits.	A.1      Restore suppression pool water level to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1      Be in MODE 3.	12 hours
	<u>AND</u> B.2      Be in MODE 4.	36 hours

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.2.2.1      Verify suppression pool water level is within limits.	24 hours

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.2.3 Residual Heat Removal (RHR) Suppression Pool Cooling

LCO 3.6.2.3 Two RHR suppression pool cooling subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR suppression pool cooling subsystem inoperable.	A.1 Restore RHR suppression pool cooling subsystem to OPERABLE status.	7 days
B. Two RHR suppression pool cooling subsystems inoperable.	B.1 Restore one RHR suppression pool cooling subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours
	<u>AND</u> C.2 Be in MODE 4.	36 hours

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.6.2.3.1      Verify each RHR suppression pool cooling subsystem 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 or can be aligned to the correct position.</p>	<p>31 days</p>
<p>SR 3.6.2.3.2      Verify each required RHR pump develops a flow rate <math>\geq 10,000</math> gpm through the associated heat exchanger while operating in the suppression pool cooling mode.</p>	<p>In accordance with the Inservice Testing Program</p>

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#### 3.6.2.4 Residual Heat Removal (RHR) Suppression Pool Spray

LCO 3.6.2.4 Two RHR suppression pool spray subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR suppression pool spray subsystem inoperable.	A.1 Restore RHR suppression pool spray subsystem to OPERABLE status.	7 days
B. Two RHR suppression pool spray subsystems inoperable.	B.1 Restore one RHR suppression pool spray subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours
	<u>AND</u> C.2 Be in MODE 4.	36 hours

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.6.2.4.1    Verify each RHR suppression pool spray subsystem 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 or can be aligned to the correct position.	31 days
SR 3.6.2.4.2    Verify each suppression pool spray nozzle is unobstructed.	10 years

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.3.1 Containment Atmospheric Dilution (CAD) System

LCO 3.6.3.1 Two CAD subsystems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or both CAD subsystems inoperable.	<p>A.1 -----NOTE----- LCO 3.0.4 is not applicable. -----</p> <p>Restore CAD subsystem(s) to OPERABLE status.</p>	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.6.3.1.1      Verify Safety Grade Instrument Gas (SGIG) System header pressure is $\geq$ 80 psig.	24 hours
SR 3.6.3.1.2      Verify CAD System liquid nitrogen storage tank level is $\geq$ 33 inches water column.	24 hours
SR 3.6.3.1.3      Verify each CAD subsystem 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 or can be aligned to the correct position.	31 days
SR 3.6.3.1.4      Verify each SGIG System manual valve in the flow paths servicing CAD System valves, that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	31 days
SR 3.6.3.1.5      Verify the CAD System supplies nitrogen to the SGIG System upon loss of the normal air supply.	24 months



### 3.6 CONTAINMENT SYSTEMS

#### 3.6.3.2 Primary Containment Oxygen Concentration

LCO 3.6.3.2 The primary containment oxygen concentration shall be  
< 4.0 volume percent.

APPLICABILITY: MODE 1 during the time period:

- a. From 24 hours after THERMAL POWER is > 15% RTP following startup, to
- b. 24 hours prior to reducing THERMAL POWER to < 15% RTP prior to a reactor shutdown.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Primary containment oxygen concentration not within limit.	A.1 Restore oxygen concentration to within limit.	24 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to $\leq$ 15% RTP.	8 hours

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.3.2.1 Verify primary containment oxygen concentration is within limits.	7 days

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.4.1 Secondary Containment

LCO 3.6.4.1 The secondary containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
During movement of irradiated fuel assemblies in the  
secondary containment,  
During CORE ALTERATIONS,  
During operations with a potential for draining the reactor  
vessel (OPDRVs).

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Secondary containment inoperable in MODE 1, 2, or 3.	A.1 Restore secondary containment to OPERABLE status.	4 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours
C. Secondary containment inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	C.1 -----NOTE----- LCO 3.0.3 is not applicable. ----- Suspend movement of irradiated fuel assemblies in the secondary containment.  <u>AND</u>	Immediately          (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u> C.3 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1.1 Verify all secondary containment equipment hatches are closed and sealed.	31 days
SR 3.6.4.1.2 Verify one secondary containment access door in each access opening is closed.	31 days
SR 3.6.4.1.3 Verify each standby gas treatment (SGT) subsystem will draw down the secondary containment to $\geq 0.25$ inch of vacuum water gauge in $\leq 120$ seconds.	24 months on a STAGGERED TEST BASIS
SR 3.6.4.1.4 Verify each SGT subsystem can maintain $\geq 0.25$ inch of vacuum water gauge in the secondary containment for 1 hour at a flow rate $\leq 10,500$ cfm.	24 months on a STAGGERED TEST BASIS

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.4.2 Secondary Containment Isolation Valves (SCIVs)

LC0 3.6.4.2 Each SCIV shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
During movement of irradiated fuel assemblies in the  
secondary containment,  
During CORE ALTERATIONS,  
During operations with a potential for draining the reactor  
vessel (OPDRVs).

#### ACTIONS

#### -----NOTES-----

1. Penetration 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 SCIVs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more penetration flow paths with one SCIV inoperable.	A.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.  <u>AND</u>	8 hours          (continued)

ACTIONS

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. -----</p> <p>Verify the affected penetration flow path is isolated.</p>	Once per 31 days
<p>B. -----NOTE----- Only applicable to penetration flow paths with two isolation valves. -----</p> <p>One or more penetration flow paths with two SCIVs inoperable.</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>	4 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	<p>C.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>C.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A or B not met during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	D.1      -----NOTE----- LCO 3.0.3 is not applicable. -----	
	Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	
	D.2      Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	D.3      Initiate action to suspend OPDRVs.	Immediately

# SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.1	<p>-----NOTES-----</p> <ol style="list-style-type: none"><li>1. Valves and blind flanges in high radiation areas may be verified by use of administrative means.</li><li>2. Not required to be met for SCIVs that are open under administrative controls.</li></ol> <p>-----</p> <p>Verify each secondary containment isolation manual valve and blind flange that is required to be closed during accident conditions is closed.</p>	31 days
SR 3.6.4.2.2	Verify the isolation time of each power operated and each automatic SCIV is within limits.	In accordance with the Inservice Testing Program
SR 3.6.4.2.3	Verify each automatic SCIV actuates to the isolation position on an actual or simulated actuation signal.	24 months

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.4.3 Standby Gas Treatment (SGT) System

LCO 3.6.4.3 Two SGT subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
During movement of irradiated fuel assemblies in the  
secondary containment,  
During CORE ALTERATIONS,  
During operations with a potential for draining the reactor  
vessel (OPDRVs).

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SGT subsystem inoperable.	A.1 Restore SGT subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	12 hours  36 hours
C. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	-----NOTE----- LCO 3.0.3 is not applicable. ----- C.1 Place OPERABLE SGT subsystem in operation. <u>OR</u>	Immediately  (continued)



ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2.1 Suspend movement of irradiated fuel assemblies in secondary containment.  <u>AND</u>	Immediately
	C.2.2 Suspend CORE ALTERATIONS.  <u>AND</u>	Immediately
	C.2.3 Initiate action to suspend OPDRVs.	Immediately
D. Two SGT subsystems inoperable in MODE 1, 2, or 3.	D.1 Enter LCO 3.0.3	Immediately
E. Two SGT subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	E.1 -----NOTE----- LCO 3.0.3 is not applicable. -----  Suspend movement of irradiated fuel assemblies in secondary containment.  <u>AND</u>	Immediately
	E.2 Suspend CORE ALTERATIONS.  <u>AND</u>	Immediately
	E.3 Initiate action to suspend OPDRVs.	Immediately

# SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.3.1      Operate each SGT subsystem for $\geq$ 15 minutes with heaters operating.	31 days
SR 3.6.4.3.2      Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3      Verify each SGT subsystem actuates on an actual or simulated initiation signal.	24 months

## 3.7 PLANT SYSTEMS

## 3.7.1 High Pressure Service Water (HPSW) System

LCO 3.7.1 Two HPSW subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

## ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One HPSW subsystem inoperable.	<p>-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown," for RHR shutdown cooling made inoperable by HPSW System. -----</p> <p>A.1 Restore HPSW subsystem to OPERABLE status.</p>	7 days
B. Both HPSW subsystems inoperable.	<p>-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.4.7 for RHR shutdown cooling made inoperable by HPSW System. -----</p> <p>B.1 Restore one HPSW subsystem to OPERABLE status.</p>	8 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	C.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.1.1 Verify each HPSW manual and power operated valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position.	31 days

### 3.7 PLANT SYSTEMS

#### 3.7.2 Emergency Service Water (ESW) System and Normal Heat Sink

LC0 3.7.2 Two ESW subsystems and normal heat sink shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ESW subsystem inoperable.	A.1 Restore ESW subsystem to OPERABLE status.	7 days
B. Water temperature of the normal heat sink is $> 90^{\circ}\text{F}$ and $\leq 92^{\circ}\text{F}$ .	B.1 Verify water temperature of the normal heat sink is $\leq 90^{\circ}\text{F}$ averaged over the previous 24 hour period.	Once per hour
C. Required Action and associated Completion Time of Condition A or B not met.  <u>OR</u>  Both ESW subsystems inoperable.  <u>OR</u>  Normal heat sink inoperable [for reasons other than condition B].	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4.	12 hours  36 hours

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.7.2.1    Verify the water level in the pump bays of the pump structure is $\geq 98.5$ ft Conowingo Datum (CD) and $\leq 113$ ft CD.	24 hours
SR 3.7.2.2    Verify the average water temperature of normal heat sink is $\leq 90^{\circ}\text{F}$ .	24 hours
SR 3.7.2.3    -----NOTE----- Isolation of flow to individual components does not render ESW System inoperable. ----- Verify each ESW subsystem manual and power operated valve in the flow paths servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.2.4    Verify each ESW subsystem actuates on an actual or simulated initiation signal.	24 months

### 3.7 PLANT SYSTEMS

#### 3.7.3 Emergency Heat Sink

LCO 3.7.3 The emergency heat sink shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required emergency cooling tower fan inoperable.	A.1 Restore required emergency cooling tower fan to OPERABLE status.	14 days
B. Emergency heat sink inoperable for reasons other than Condition A.	B.1 Restore emergency heat sink to OPERABLE status.	7 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours
	<u>AND</u> C.2 Be in MODE 4.	36 hours

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify the water level of emergency heat sink reservoir is $\geq 17$ ft.	31 days
SR 3.7.3.2	Operate each required emergency cooling tower fan for $\geq 15$ minutes.	92 days



### 3.7 PLANT SYSTEMS

#### 3.7.4 Main Control Room Emergency Ventilation (MCREV) System

LCO 3.7.4 Two MCREV subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
During movement of irradiated fuel assemblies in the  
secondary containment,  
During CORE ALTERATIONS,  
During operations with a potential for draining the reactor  
vessel (OPDRVs).

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MCREV subsystem inoperable.	A.1 Restore MCREV subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	12 hours  36 hours
C. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	-----NOTE----- LCO 3.0.3 is not applicable. ----- C.1 Place OPERABLE MCREV subsystem in operation. <u>OR</u>	Immediately  (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2.1 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	
	C.2.2 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	C.2.3 Initiate action to suspend OPDRVs.	Immediately
D. Two MCREV subsystems inoperable in MODE 1, 2, or 3.	D.1 Enter LCO 3.0.3.	Immediately
E. Two MCREV subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	-----NOTE----- LCO 3.0.3 is not applicable. -----	
	E.1 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	
	E.2 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	E.3 Initiate action to suspend OPDRVs.	Immediately

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.7.4.1      Operate each MCREV subsystem for $\geq 15$ minutes.	31 days
SR 3.7.4.2      Perform required MCREV filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.4.3      Verify each MCREV subsystem actuates on an actual or simulated initiation signal.	24 months
SR 3.7.4.4      Verify each MCREV subsystem can maintain a positive pressure of $\geq 0.1$ inches water gauge relative to the turbine building during operation at a flow rate of $\geq 2700$ cfm and $\leq 3300$ cfm.	24 months on a STAGGERED TEST BASIS

### 3.7 PLANT SYSTEMS

#### 3.7.5 Main Condenser Offgas

LCO 3.7.5 The gross gamma activity rate of the noble gases measured at the steam jet air ejector (SJAE) discharge at the offgas sample rack shall be  $\leq 320,000 \mu\text{Ci/second}$  after decay of 30 minutes.

APPLICABILITY: MODE 1,  
MODES 2 and 3 with any main steam line not isolated and SJAE  
in operation.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Gross gamma activity rate of the noble gases not within limit.	A.1 Restore gross gamma activity rate of the noble gases to within limit.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Isolate all main steam lines.	12 hours
	<u>OR</u>	
	B.2 Isolate SJAE.	12 hours
	<u>OR</u>	
	B.3.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	B.3.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.5.1 -----NOTE-----            Not required to be performed until 31 days            after any main steam line not isolated and            SJAE in operation.            -----            Verify the gross gamma activity rate of the            noble gases is <math>\leq 320,000 \mu\text{Ci/second}</math> after            decay of 30 minutes.</p>	<p>31 days  <u>AND</u>            Once within            4 hours after a  <math>\geq 50\%</math> increase            in the nominal            steady state            fission gas            release after            factoring out            increases due            to changes in            THERMAL POWER            level</p>

### 3.7 PLANT SYSTEMS

#### 3.7.6 Main Turbine Bypass System

LCO 3.7.6 The Main Turbine Bypass System shall be OPERABLE.

OR

The following limits are made applicable:

- a. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR; and
- b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR.

APPLICABILITY: THERMAL POWER  $\geq$  25% RTP.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Satisfy the requirements of the LCO.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify one complete cycle of each main turbine bypass valve.	31 days
SR 3.7.6.2	Perform a system functional test.	24 months
SR 3.7.6.3	Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits.	24 months

### 3.7 PLANT SYSTEMS

#### 3.7.7 Spent Fuel Storage Pool Water Level

LCO 3.7.7      The spent fuel storage pool water level shall be  $\geq$  232 ft 3 inches plant elevation.

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

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Spent fuel storage pool water level not within limit.	<p>A.1      -----NOTE----- LCO 3.0.3 is not applicable. -----</p> <p>Suspend movement of fuel assemblies in the spent fuel storage pool.</p>	Immediately

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.7.1      Verify the spent fuel storage pool water level is $\geq$ 232 ft 3 inches plant elevation.	7 days



### 3.8 ELECTRICAL POWER SYSTEMS

#### 3.8.1 AC Sources—Operating

LCO 3.8.1 The following AC electrical power sources shall be OPERABLE:

- a. Two qualified circuits between the offsite transmission network and the onsite Unit 3 Class 1E AC Electrical Power Distribution System;
- b. Four diesel generators (DGs) capable of supplying the Unit 3 onsite Class 1E AC Electrical Power Distribution System;
- c. The qualified circuit(s) between the offsite transmission network and the Unit 2 onsite Class 1E AC electrical power distribution subsystem(s) needed to support the Unit 2 powered equipment required to be OPERABLE by LCO 3.6.3.1, "Containment Atmospheric Dilution (CAD) System," LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," LCO 3.7.2, "Emergency Service Water (ESW) System and Normal Heat Sink," LCO 3.7.4, "Main Control Room Emergency Ventilation (MCREV) System," and LCO 3.8.4, "DC Sources—Operating"; and
- d. The DG(s) capable of supplying the Unit 2 onsite Class 1E AC electrical power distribution subsystem(s) needed to support the Unit 2 powered equipment required to be OPERABLE by LCO 3.6.3.1, LCO 3.6.4.3, LCO 3.7.2, LCO 3.7.4, and LCO 3.8.4.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One offsite circuit inoperable.	A.1	Perform SR 3.8.1.1 for OPERABLE offsite circuits.
		1 hour
		<u>AND</u>
		Once per 8 hours thereafter
	<u>AND</u>	
	A.2	Declare required feature(s) with no offsite power available inoperable when the redundant required feature(s) are inoperable.
		24 hours from discovery of no offsite power to one 4 kV emergency bus concurrent with inoperability of redundant required feature(s)
	<u>AND</u>	
	A.3	Restore offsite circuit to OPERABLE status.
		7 days
		<u>AND</u>
		14 days from discovery of failure to meet LCO 3.8.1.a or b

(continued)

## ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One DG inoperable.	B.1 Verify correct breaker alignment, required equipment available, and indicated power available for the Conowingo Tie-Line.	Immediately <u>AND</u> Once per 12 hours thereafter
	<u>AND</u>	
	B.2 Perform SR 3.8.1.1 for OPERABLE offsite circuits.	1 hour <u>AND</u> Once per 8 hours thereafter
	<u>AND</u>	
	B.3 Declare required feature(s), supported by the inoperable DG, inoperable when the redundant required feature(s) are inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	<u>AND</u>	
	B.4.1 Determine OPERABLE DG(s) are not inoperable due to common cause failure.	24 hours
	<u>OR</u>	
	B.4.2 Perform SR 3.8.1.2 for OPERABLE DG(s).	24 hours
	<u>AND</u>	
		(continued)

## ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.5 Restore DG to OPERABLE status.	14 days from discovery of failure to meet LCO 3.8.1.a or b
C. Required Action B.1 and associated Completion Time not met.	C.1 Restore DG to OPERABLE status.	7 days
D. Two or more offsite circuits inoperable.	D.1 Declare required feature(s) inoperable when the redundant required feature(s) are inoperable.	12 hours from discovery of Condition D concurrent with inoperability of redundant required feature(s)
	<u>AND</u> D.2 Restore all but one offsite circuit to OPERABLE status.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One offsite circuit inoperable.  <u>AND</u>  One DG inoperable.	-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.8.7, "Distribution Systems—Operating," when Condition E is entered with no AC power source to any 4 kV emergency bus. -----	
	E.1 Restore offsite circuit to OPERABLE status.	12 hours
	<u>OR</u>  E.2 Restore DG to OPERABLE status.	12 hours
F. Two or more DGs inoperable.	F.1 Restore all but one DG to OPERABLE status.	2 hours
G. Required Action and associated Completion Time of Condition A, C, D, E, or F not met.  <u>OR</u>  Required Action B.2, B.3, B.4.1, B.4.2, or B.5 and associated Completion Time not met.	G.1 Be in MODE 3.	12 hours
	<u>AND</u>  G.2 Be in MODE 4.	36 hours

(continued)

## ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. One or more offsite circuits and two or more DGs inoperable.  <u>OR</u>  Two or more offsite circuits and one DG inoperable.	H.1 Enter LCO 3.0.3.	Immediately

## SURVEILLANCE REQUIREMENTS

-----NOTE-----  
SR 3.8.1.1 through SR 3.8.1.20 are applicable only to the Unit 3 AC sources.  
SR 3.8.1.21 is applicable only to the Unit 2 AC sources.  
-----

SURVEILLANCE	FREQUENCY
SR 3.8.1.1 Verify correct breaker alignment and indicated power availability for each offsite circuit.	7 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.2 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Performance of SR 3.8.1.7 satisfies this SR.</li> <li>2. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading.</li> <li>3. A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.7 must be met.</li> <li>4. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> </ol> <p>-----</p> <p>Verify each DG starts from standby conditions and achieves steady state voltage <math>\geq 4160</math> V and <math>\leq 4400</math> V and frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</p>	<p>31 days</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.3 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. DG loadings may include gradual loading as recommended by the manufacturer.</li> <li>2. Momentary transients outside the load range do not invalidate this test.</li> <li>3. This Surveillance shall be conducted on only one DG at a time.</li> <li>4. This SR shall be preceded by and immediately follow, without shutdown, a successful performance of SR 3.8.1.2 or SR 3.8.1.7.</li> <li>5. A single test will satisfy this Surveillance for both units, with synchronization to the Unit 3 4 kV emergency bus for one periodic test and synchronization to the Unit 2 4 kV emergency bus during the next periodic test. However, if the test is not performed on Unit 2, then the test shall be performed synchronized to the Unit 3 4 kV emergency bus.</li> </ol> <p>-----</p> <p>Verify each DG is synchronized and loaded and operates for <math>\geq 60</math> minutes at a load <math>\geq 2400</math> kW and <math>\leq 2600</math> kW.</p>	31 days
<p>SR 3.8.1.4      Verify each day tank contains <math>\geq 250</math> gal of fuel oil.</p>	31 days
<p>SR 3.8.1.5      Check for and remove accumulated water from each day tank.</p>	31 days

(continued)



**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.6     Verify the fuel oil transfer system operates to automatically transfer fuel oil from storage tank to the day tank.</p>	<p>31 days</p>
<p>SR 3.8.1.7     -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> </ol> <p>-----</p> <p>Verify each DG starts from standby condition and achieves, in <math>\leq 10</math> seconds, voltage <math>\geq 4160</math> V and frequency <math>\geq 58.8</math> Hz, and after steady state conditions are reached, maintains voltage <math>\geq 4160</math> V and <math>\leq 4400</math> V and frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</p>	<p>184 days</p>
<p>SR 3.8.1.8     -----NOTE-----</p> <p>This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR.</p> <p>-----</p> <p>Verify automatic and manual transfer of the unit power supply from the normal offsite circuit to the alternate offsite circuit.</p>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.9 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. If performed with the DG synchronized with offsite power, it shall be performed at a power factor <math>\leq 0.89</math>.</li> <li>2. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> </ol> <p>-----</p> <p>Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and:</p> <ol style="list-style-type: none"> <li>a. Following load rejection, the frequency is <math>\leq 66.75</math> Hz;</li> <li>b. Within 1.8 seconds following load rejection, the voltage is <math>\geq 3750</math> V and <math>\leq 4570</math> V, and after steady state conditions are reached, maintains voltage <math>\geq 4160</math> V and <math>\leq 4400</math> V; and</li> <li>c. Within 2.4 seconds following load rejection, the frequency is <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</li> </ol>	<p>24 months</p>
<p>SR 3.8.1.10 -----NOTE-----</p> <p>A single test at the specified Frequency will satisfy this Surveillance for both units.</p> <p>-----</p> <p>Verify each DG operating at a power factor <math>\leq 0.89</math> does not trip and voltage is maintained <math>\leq 5230</math> V during and following a load rejection of <math>\geq 2400</math> kW and <math>\leq 2600</math> kW.</p>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.11 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal:</p> <ol style="list-style-type: none"> <li>a. De-energization of emergency buses;</li> <li>b. Load shedding from emergency buses; and</li> <li>c. DG auto-starts from standby condition and:               <ol style="list-style-type: none"> <li>1. energizes associated 4 kV emergency bus in <math>\leq 10</math> seconds,</li> <li>2. energizes auto-connected shutdown loads through individual load timers,</li> <li>3. maintains steady state voltage <math>\geq 4160</math> V and <math>\leq 4400</math> V,</li> <li>4. maintains steady state frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz, and</li> <li>5. supplies auto-connected shutdown loads for <math>\geq 5</math> minutes.</li> </ol> </li> </ol>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.12 -----NOTE-----  All DG starts may be preceded by an engine  prelube period.  -----</p> <p>Verify on an actual or simulated Emergency  Core Cooling System (ECCS) initiation  signal each DG auto-starts from standby  condition and:</p> <ul style="list-style-type: none"> <li>a. In <math>\leq 10</math> seconds after auto-start  achieves voltage <math>\geq 4160</math> V, and after  steady state conditions are reached,  maintains voltage <math>\geq 4160</math> V and  <math>\leq 4400</math> V;</li> <li>b. In <math>\leq 10</math> seconds after auto-start  achieves frequency <math>\geq 58.8</math> Hz, and  after steady state conditions are  reached, maintains frequency <math>\geq 58.8</math> Hz  and <math>\leq 61.2</math> Hz;</li> <li>c. Operates for <math>\geq 5</math> minutes;</li> <li>d. Permanently connected loads remain  energized from the offsite power  system; and</li> <li>e. Emergency loads are energized or  auto-connected through individual load  timers from the offsite power system.</li> </ul>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.13 -----NOTE-----  A single test at the specified Frequency  will satisfy this Surveillance for both  units.  -----  Verify each DG's automatic trips are  bypassed on an actual or simulated ECCS  initiation signal except:</p> <ul style="list-style-type: none"> <li>a. Engine overspeed;</li> <li>b. Generator differential overcurrent;</li> <li>c. Generator ground neutral overcurrent; and</li> <li>d. Manual cardox initiation.</li> </ul>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.14 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Momentary transients outside the load and power factor ranges do not invalidate this test.</li> <li>2. If grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.</li> <li>3. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> </ol> <p>-----</p> <p>Verify each DG operating at a power factor <math>\leq 0.89</math> operates for <math>\geq 24</math> hours:</p> <ol style="list-style-type: none"> <li>a. For <math>\geq 2</math> hours loaded <math>\geq 2800</math> kW and <math>\leq 3000</math> kW; and</li> <li>b. For the remaining hours of the test loaded <math>\geq 2400</math> kW and <math>\leq 2600</math> kW.</li> </ol>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.15 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated <math>\geq 2</math> hours loaded <math>\geq 2400</math> kW and <math>\leq 2600</math> kW.</li> <li>Momentary transients outside of load range do not invalidate this test.</li> <li>2. All DG starts may be preceded by an engine prelube period.</li> <li>3. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> </ol> <p>-----</p> <p>Verify each DG starts and achieves, in <math>\leq 10</math> seconds, voltage <math>\geq 4160</math> V and frequency <math>\geq 58.8</math> Hz, and after steady state conditions are reached, maintains voltage <math>\geq 4160</math> V and <math>\leq 4400</math> V and frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</p>	<p>24 months</p>

(continued)

**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.16 -----NOTE-----  This Surveillance shall not be performed in  MODE 1, 2, or 3. However, credit may be  taken for unplanned events that satisfy  this SR.  -----</p> <p>Verify each DG:</p> <ul style="list-style-type: none"> <li>a. Synchronizes with offsite power source  while loaded with emergency loads upon  a simulated restoration of offsite  power;</li> <li>b. Transfers loads to offsite power  source; and</li> <li>c. Returns to ready-to-load operation.</li> </ul>	<p>24 months</p>
<p>SR 3.8.1.17 -----NOTE-----  A single test at the specified Frequency  will satisfy this Surveillance for both  units.  -----</p> <p>Verify with a DG operating in test mode and  connected to its bus, an actual or  simulated ECCS initiation signal overrides  the test mode by:</p> <ul style="list-style-type: none"> <li>a. Returning DG to ready-to-load  operation; and</li> <li>b. Automatically energizing the emergency  load from offsite power.</li> </ul>	<p>24 months</p>

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.18 -----NOTE-----  This Surveillance shall not be performed in  MODE 1, 2, or 3. However, credit may be  taken for unplanned events that satisfy  this SR.  -----    Verify interval between each timed load  block is within <math>\pm 10\%</math> of design interval  for each individual load timer.</p>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.19 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>Verify, on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCS initiation signal:</p> <ol style="list-style-type: none"> <li>a. De-energization of emergency buses;</li> <li>b. Load shedding from emergency buses; and</li> <li>c. DG auto-starts from standby condition and:               <ol style="list-style-type: none"> <li>1. energizes associated 4 kV emergency bus in <math>\leq 10</math> seconds,</li> <li>2. energizes auto-connected emergency loads through individual load timers,</li> <li>3. achieves steady state voltage <math>\geq 4160</math> V and <math>\leq 4400</math> V,</li> <li>4. achieves steady state frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz, and</li> <li>5. supplies auto-connected emergency loads for <math>\geq 5</math> minutes.</li> </ol> </li> </ol>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.20 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> </ol> <p>-----</p> <p>Verify, when started simultaneously from standby condition, each DG achieves, in <math>\leq 10</math> seconds, voltage <math>\geq 4160</math> V and frequency <math>\geq 58.8</math> Hz.</p>	<p>10 years</p>
<p>SR 3.8.1.21 -----NOTE-----</p> <p>When Unit 2 is in MODE 4 or 5, or moving irradiated fuel assemblies in the secondary containment, the Note to Unit 2 SR 3.8.2.1 is applicable.</p> <p>-----</p> <p>For required Unit 2 AC sources, the SRs of Unit 2 Specification 3.8.1, except SR 3.8.1.8 (when only one Unit 2 offsite circuit is required), SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.17, SR 3.8.1.18 (ECCS load block requirement only), and SR 3.8.1.19, are applicable.</p>	<p>In accordance with applicable SRs</p>

### 3.8 ELECTRICAL POWER SYSTEMS

#### 3.8.2 AC Sources—Shutdown

LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

- a. One qualified circuit between the offsite transmission network and the Unit 3 onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems—Shutdown";
- b. Two DGs each capable of supplying one Unit 3 onsite Class 1E AC electrical power distribution subsystem required by LCO 3.8.8;
- c. One qualified circuit between the offsite transmission network and the Unit 2 onsite Class 1E AC electrical power distribution subsystem(s) needed to support the Unit 2 powered equipment required to be OPERABLE by LCO 3.6.4.3, "Standby Gas Treatment (SGT) System", LCO 3.7.4, "Main Control Room Emergency Ventilation (MCREV) System," and LCO 3.8.5, "DC Sources—Shutdown"; and
- d. The DG(s) capable of supplying one subsystem of each of the Unit 2 powered equipment required to be OPERABLE by LCO 3.6.4.3, LCO 3.7.4, and LCO 3.8.5.

APPLICABILITY: MODES 4 and 5,  
During movement of irradiated fuel assemblies in the  
secondary containment.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required offsite circuits inoperable.	-----NOTE----- Enter applicable Condition and Required Actions of LCO 3.8.8, with one or more required 4 kV emergency buses de-energized as a result of Condition A. -----	
	A.1 Declare affected required feature(s), with no offsite power available inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	
	A.2.3 Initiate action to suspend operations with a potential for draining the reactor vessel (OPDRVs).	Immediately
	<u>AND</u>	
		(continued)

## ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.4 Initiate action to restore required offsite power circuit(s) to OPERABLE status.	Immediately
B. One required DG inoperable.	B.1 Declare affected required feature(s) with no DG available inoperable.	Immediately
	<u>OR</u>	
	B.2.1 Suspend CORE ALTERATIONS	Immediately
	<u>AND</u>	
	B.2.2 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	
	B.2.3 Initiate action to suspend OPDRVs.	Immediately
	<u>AND</u>	
	B.2.4 Initiate action to restore required DGs to OPERABLE status.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two or more required DGs inoperable.	C.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	C.2 Suspend movement of irradiated fuel assemblies in secondary containment.	Immediately
	<u>AND</u>	
	C.3 Initiate action to suspend OPDRVs.	Immediately
	<u>AND</u>	
	C.4 Initiate action to restore required DG(s) to OPERABLE status.	Immediately

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.8.2.1 -----NOTE----- The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.11, SR 3.8.1.13 through SR 3.8.1.16, SR 3.8.1.18, and SR 3.8.1.19.</p> <p>-----NOTE----- The requirements of SR 3.8.1.12, SR 3.8.1.13, and SR 3.8.1.19 are not required to be met during periods that ECCS are not required.</p> <p>For required Unit 3 AC sources the SRs of Specification 3.8.1, except SR 3.8.1.8, SR 3.8.1.17, and SR 3.8.1.20, are applicable.</p>	<p>In accordance with applicable SRs</p>
<p>SR 3.8.2.2 -----NOTE----- When Unit 2 is not in MODE 1, 2, or 3, the Note to Unit 2 SR 3.8.2.1 is applicable.</p> <p>For required Unit 2 AC sources, the SRs of Unit 2 Specification 3.8.1, except SR 3.8.1.8 (when only one Unit 2 offsite circuit is required), SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.17, SR 3.8.1.18 (ECCS load block requirement only), SR 3.8.1.19, and SR 3.8.1.20, are applicable.</p>	<p>In accordance with applicable SRs</p>



### 3.8 ELECTRICAL POWER SYSTEMS

#### 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

LCO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required diesel generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE.

#### ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more DGs with fuel oil level < 31,000 gal and > 27,500 gal in storage tank.	A.1 Restore fuel oil level to within limits.	48 hours
B. One or more DGs with lube oil inventory < 350 gal and > 300 gal.	B.1 Restore lube oil inventory to within limits.	48 hours
C. One or more DGs with stored fuel oil total particulates not within limit.	C.1 Restore fuel oil total particulates to within limit.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more DGs with new fuel oil properties not within limits.	D.1 Restore stored fuel oil properties to within limits.	30 days
E. One or more DGs with required starting air receiver pressure < 225 psig and $\geq$ 150 psig.	E.1 Restore required starting air receiver pressure to $\geq$ 225 psig.	48 hours
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.  <u>OR</u>  One or more DGs with diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, C, D, or E.	F.1 Declare associated DG inoperable.	Immediately

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains $\geq 31,000$ gal of fuel.	31 days
SR 3.8.3.2	Verify lube oil inventory is $\geq 350$ gal.	31 days
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify each DG air start receiver pressure is $\geq 225$ psig.	31 days
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	31 days

### 3.8 ELECTRICAL POWER SYSTEMS

#### 3.8.4 DC Sources—Operating

LCO 3.8.4 The following DC electrical power subsystems shall be OPERABLE:

- a. Unit 3 Division I and Division II DC electrical power subsystems; and
- b. Unit 2 Division I and Division II DC electrical power subsystems.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Unit 2 DC electrical power subsystem inoperable due to performance of SR 3.8.4.7 or SR 3.8.4.8.	-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.8.7, "Distribution Systems—Operating," when Condition A results in de-energization of a Unit 3 4 kV emergency bus or de-energization of a Unit 2 DC bus. -----	
	A.1 Restore Unit 2 DC electrical power subsystem to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One Unit 2 DC electrical power subsystem inoperable for reasons other than Condition A.	<p>-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.8.7, "Distribution Systems—Operating," when Condition B results in de-energization of a Unit 3 4 kV emergency bus. -----</p> <p>B.1 Restore Unit 2 DC electrical power subsystem to OPERABLE status.</p>	12 hours
C. One Unit 3 DC electrical power subsystem inoperable.	C.1 Restore Unit 3 DC electrical power subsystem to OPERABLE status.	2 hours
D. Required Action and Associated Completion Time of Condition A, B, or C not met.	<p>D.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>D.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>
E. Two or more inoperable DC electrical power subsystems.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

-----NOTE-----  
SR 3.8.4.1 through SR 3.8.4.8 are applicable only to the Unit 3 DC electrical power subsystems. SR 3.8.4.9 is applicable only to the Unit 2 DC electrical power subsystems.  
-----

SURVEILLANCE	FREQUENCY
SR 3.8.4.1    Verify battery terminal voltage is $\geq 123.5$ V on float charge.	-----NOTE----- The 7 day Frequency is not applicable if the battery is on equalize charge or has been on equalize charge at any time during the previous 1 day. ----- 7 days AND 14 days
SR 3.8.4.2    Verify no visible corrosion at battery terminals and connectors.  <u>OR</u>  Verify battery connection resistance is $\leq 40 \text{ E-6 ohms}$ .	92 days
SR 3.8.4.3    Verify battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration that could potentially degrade battery performance.	12 months

(continued)

**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE	FREQUENCY
SR 3.8.4.4 Remove visible corrosion and verify battery cell to cell and terminal connections are coated with anti-corrosion material.	12 months
SR 3.8.4.5 Verify battery connection resistance is $\leq 40 \text{ E-6 ohms}$ .	12 months
SR 3.8.4.6 Verify each required battery charger supplies $\geq 200 \text{ amps}$ at $\geq 125 \text{ V}$ for $\geq 4 \text{ hours}$ .	24 months
<p>SR 3.8.4.7 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. SR 3.8.4.8 may be performed in lieu of the service test in SR 3.8.4.7 once per 60 months when SR 3.8.4.8 envelops the duty cycle of the battery.</li> <li>2. This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR.</li> </ol> <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>	24 months

(continued)

**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.8 -----NOTE-----  This Surveillance shall not be performed in  MODE 1, 2, or 3. However, credit may be  taken for unplanned events that satisfy  this SR.  -----  Verify battery capacity is <math>\geq 80\%</math> of the  manufacturer's rating when subjected to a  performance discharge test or a modified  performance discharge test.</p>	<p>60 months  <u>AND</u>  12 months when  battery shows  degradation or  has reached 85%  of expected  life with  capacity &lt; 100%  of  manufacturer's  rating  <u>AND</u>  24 months when  battery has  reached 85% of  the expected  life with  capacity <math>\geq 100\%</math>  of  manufacturer's  rating</p>

(continued)



**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.9 -----NOTE-----  When Unit 2 is in MODE 4 or 5, or moving  irradiated fuel assemblies in the secondary  containment, the Note to Unit 2 SR 3.8.5.1  is applicable.  -----  For required Unit 2 DC electrical power  subsystems, the SRs of Unit 2 Specification  3.8.4 are applicable.</p>	<p>In accordance  with applicable  SRs</p>

### 3.8 ELECTRICAL POWER SYSTEMS

#### 3.8.5 DC Sources—Shutdown

LCO 3.8.5 The following DC electrical power subsystems shall be OPERABLE:

- a. Unit 3 DC electrical power subsystems needed to support the DC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems—Shutdown"; and
- b. Unit 2 DC electrical power subsystems needed to support the DC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems—Shutdown."

APPLICABILITY: MODES 4 and 5,  
During movement of irradiated fuel assemblies in the secondary containment.

#### 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 feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.2 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	
	A.2.3 Initiate action to suspend operations with a potential for draining the reactor vessel.	Immediately
	<u>AND</u>	
	A.2.4 Initiate action to restore required DC electrical power subsystems to OPERABLE status.	Immediately

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.8.5.1 -----NOTE-----  The following SRs are not required to be performed: SR 3.8.4.7 and SR 3.8.4.8.  -----  For required Unit 3 DC electrical power subsystems, the following SRs are applicable:    SR 3.8.4.1      SR 3.8.4.4      SR 3.8.4.7  SR 3.8.4.2      SR 3.8.4.5      SR 3.8.4.8.  SR 3.8.4.3      SR 3.8.4.6</p>	<p>In accordance with applicable SRs</p>
<p>SR 3.8.5.2 -----NOTE-----  When Unit 2 is in MODE 4 or 5, or moving irradiated fuel assemblies in the secondary containment, the Note to Unit 2 SR 3.8.5.1 is applicable.  -----  For required Unit 2 DC electrical power subsystems, the SRs for Unit 2 Specification 3.8.4 are applicable.</p>	<p>In accordance with applicable SRs</p>

### 3.8 ELECTRICAL POWER SYSTEMS

#### 3.8.6 Battery Cell Parameters

LC0 3.8.6 Battery cell parameters for the station batteries shall be within the limits of Table 3.8.6-1.

APPLICABILITY: When associated DC electrical power subsystems 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 with one or more battery cell parameters not within Category A or B limits.	A.1 Verify pilot cells electrolyte level and float voltage meet Table 3.8.6-1 Category C limits.	1 hour
	<u>AND</u>	
	A.2 Verify battery cell parameters meet Table 3.8.6-1 Category C limits.	24 hours
	<u>AND</u>	Once per 7 days thereafter
	A.3 Restore battery cell parameters to Category A and B limits of Table 3.8.6-1.	31 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. Required Action and associated Completion Time of Condition A not met.</p> <p><u>OR</u></p> <p>One or more batteries with average electrolyte temperature of the representative cells not within limits.</p> <p><u>OR</u></p> <p>One or more batteries with one or more battery cell parameters not within Category C limits.</p>	<p>B.1 Declare associated battery inoperable.</p>	<p>Immediately</p>

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.8.6.1    Verify battery cell parameters meet Table 3.8.6-1 Category A limits.</p>	<p>-----NOTE----- The 7 day Frequency is not applicable if the battery is on equalize charge or has been on equalize charge at any time during the previous 4 days. -----</p> <p>7 days</p> <p><u>AND</u></p> <p>14 days</p>
<p>SR 3.8.6.2    Verify each battery cell meets Table 3.8.6-1 Category B limits.</p>	<p>92 days</p> <p><u>AND</u></p> <p>Once within 24 hours after battery discharge &lt; 100 V</p> <p><u>AND</u></p> <p>Once within 24 hours after battery overcharge &gt; 145 V</p>
<p>SR 3.8.6.3    Verify average electrolyte temperature of representative cells is <math>\geq 40^{\circ}\text{F}</math>.</p>	<p>92 days</p>

Table 3.8.6-1 (page 1 of 1)  
Battery Cell Parameter Requirements

PARAMETER	CATEGORY A: LIMITS FOR EACH DESIGNATED PILOT CELL	CATEGORY B: LIMITS FOR EACH CONNECTED CELL	CATEGORY C: ALLOWABLE LIMIT FOR EACH CONNECTED CELL
Electrolyte Level	> Minimum level indication mark, and $\leq \frac{1}{2}$ inch above maximum level indication mark(a)	> Minimum level indication mark, and $\leq \frac{1}{2}$ inch above maximum level indication mark(a)	Above top of plates, and not overflowing
Float Voltage	$\geq 2.13$ V	$\geq 2.13$ V	$> 2.07$ V
Specific Gravity(b)(c)	$\geq 1.195$	$\geq 1.195$ <u>AND</u> Average of all connected cells $> 1.205$	Not more than 0.020 below average of all connected cells <u>AND</u> Average of all connected cells $\geq 1.190$

- (a) It is acceptable for the electrolyte level to temporarily increase above the specified maximum level during equalizing charges provided it is not overflowing.
- (b) Corrected for electrolyte temperature and level. Level correction is not required, however, when on float charge and battery charging current is  $< 1$  amp.
- (c) A battery charging current of  $< 1$  amp when on float charge is acceptable for meeting specific gravity limits following a battery recharge for:  
1) a maximum of 30 days if a deep discharge did not occur; and 2) a maximum of 180 days if a deep discharge did occur. When charging current is used to satisfy specific gravity requirements, specific gravity of each connected cell shall be measured prior to the expiration of the applicable allowance.



### 3.8 ELECTRICAL POWER SYSTEMS

#### 3.8.7 Distribution Systems—Operating

LCO 3.8.7 The following AC and DC electrical power distribution subsystems shall be OPERABLE:

- a. Unit 3 Division I and Division II AC and DC electrical power distribution subsystems; and
- b. Unit 2 AC and DC electrical power distribution subsystems needed to support equipment required to be OPERABLE by LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown," LCO 3.5.1, "ECCS—Operating," LCO 3.6.2.3, "RHR Suppression Pool Cooling," LCO 3.6.2.4, "RHR Suppression Pool Spray," LCO 3.6.3.1, "Containment Atmospheric Dilution (CAD) System," LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," LCO 3.7.1, "High Pressure Service Water (HPSW) System," LCO 3.7.2, "Emergency Service Water (ESW) System and Normal Heat Sink," LCO 3.7.3, "Emergency Heat Sink," LCO 3.7.4, "Main Control Room Emergency Ventilation (MCREV) System," and LCO 3.8.1, "AC Sources—Operating."

APPLICABILITY: MODES 1, 2, and 3.

# ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Unit 2 AC electrical power distribution subsystems inoperable.	<p>-----NOTE-----  Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources—Operating," when Condition A results in a de-energization of a required Unit 2 125 V battery charger.  -----</p> <p>A.1 Restore required Unit 2 AC electrical power distribution subsystem(s) to OPERABLE status.</p>	7 days
B. One Unit 2 DC electrical power distribution subsystem inoperable.	B.1 Restore Unit 2 DC electrical power distribution subsystem to OPERABLE status.	12 hours
C. One Unit 3 AC electrical power distribution subsystem inoperable.	C.1 Restore Unit 3 AC electrical power distribution subsystem to OPERABLE status.	8 hours <u>AND</u> 16 hours from discovery of failure to meet LCO 3.8.7.a

(continued)

**ACTIONS (continued)**

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One Unit 3 DC electrical power distribution subsystem inoperable.	D.1 Restore Unit 3 DC electrical power distribution subsystem to OPERABLE status.	2 hours  <u>AND</u> 16 hours from discovery of failure to meet LCO 3.8.7.a
E. Required Action and associated Completion Time of Condition A, B, C, or D not met.	E.1 Be in MODE 3.  <u>AND</u> E.2 Be in MODE 4.	12 hours  36 hours
F. Two or more inoperable electrical power distribution subsystems that result in a loss of function.	F.1 Enter LCO 3.0.3.	Immediately

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.8.7.1 Verify:  a. Correct breaker alignments to required AC electrical power distribution subsystems; and  b. Indicated power availability to required AC and DC electrical power distribution subsystems.	7 days

### 3.8 ELECTRICAL POWER SYSTEMS

#### 3.8.8 Distribution Systems—Shutdown

LCO 3.8.8      The necessary portions of the following AC and DC electrical power distribution subsystems shall be OPERABLE:

- a. Unit 3 AC and DC electrical power distribution subsystems needed to support equipment required to be OPERABLE; and
- b. Unit 2 AC and DC electrical power distribution subsystems needed to support equipment required to be OPERABLE by LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown," LCO 3.5.2, "ECCS—Shutdown," LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," LCO 3.7.4, "Main Control Room Emergency Ventilation (MCREV) System," LCO 3.8.2, "AC Sources—Shutdown," LCO 3.9.7, "RHR—High Water Level," and LCO 3.9.8, "RHR—Low Water Level."

APPLICABILITY:    MODES 4 and 5,  
During movement of irradiated fuel assemblies in the  
secondary containment.

#### ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC or DC electrical power distribution subsystems inoperable.	A.1      Declare associated supported required feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1    Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.2 Suspend handling of irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	
	A.2.3 Initiate action to suspend operations with a potential for draining the reactor vessel.	Immediately
	<u>AND</u>	
	A.2.4 Initiate actions to restore required AC and DC electrical power distribution subsystems to OPERABLE status.	Immediately
	<u>AND</u>	
	A.2.5 Declare associated required shutdown cooling subsystem(s) inoperable and not in operation.	Immediately

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.8.8.1    Verify:</p> <ul style="list-style-type: none"><li>a.    Correct breaker alignments to required AC electrical power distribution subsystems; and</li><li>b.    Indicated power availability to required AC and DC electrical power distribution subsystems.</li></ul>	<p>7 days</p>

### 3.9 REFUELING OPERATIONS

### 3.9.1 Refueling Equipment Interlocks

LCO 3.9.1 The refueling equipment interlocks shall be OPERABLE.

**APPLICABILITY:** During in-vessel fuel movement with equipment associated with the interlocks.

## ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required refueling equipment interlocks inoperable.	A.1 Suspend in-vessel fuel movement with equipment associated with the inoperable interlock(s).	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.9.1.1 Perform CHANNEL FUNCTIONAL TEST on each of the following required refueling equipment , interlock inputs:</p> <ul style="list-style-type: none"><li>a. All-rods-in,</li><li>b. Refuel platform position,</li><li>c. Refuel platform fuel grapple, fuel loaded,</li><li>d. Refuel platform frame mounted auxiliary hoist, fuel loaded,</li><li>e. Refuel platform monorail mounted hoist, fuel loaded.</li></ul>	<p>7 days</p>



### 3.9 REFUELING OPERATIONS

### 3.9.2 Refuel Position One-Rod-Out Interlock

**LCO 3.9.2      The refuel position one-rod-out interlock shall be OPERABLE.**

APPLICABILITY: MODE 5 with the reactor mode switch in the refuel position and any control rod withdrawn.

## ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refuel position one-rod-out interlock inoperable.	A.1 Suspend control rod withdrawal.	Immediately
	<u>AND</u> A.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

## SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.2.1	Verify reactor mode switch locked in refuel position.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.9.2.2      -----NOTE----- Not required to be performed until 1 hour after any control rod is withdrawn. ----- Perform CHANNEL FUNCTIONAL TEST.</p>	<p>7 days</p>

### 3.9 REFUELING OPERATIONS

#### 3.9.3 Control Rod Position

LCO 3.9.3 All control rods shall be fully inserted.

APPLICABILITY: When loading fuel assemblies into the core.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more control rods not fully inserted.	A.1 Suspend loading fuel assemblies into the core.	Immediately

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.3.1 Verify all control rods are fully inserted.	12 hours

### 3.9 REFUELING OPERATIONS

#### 3.9.4 Control Rod Position Indication

LCO 3.9.4      The control rod "full-in" position indication for each control rod shall be OPERABLE.

APPLICABILITY:    MODE 5.

#### ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each required position indication.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required control rod position indications inoperable.	A.1.1 Suspend in-vessel fuel movement.	Immediately
	<u>AND</u>	
	A.1.2 Suspend control rod withdrawal.	Immediately
	<u>AND</u>	
	A.1.3 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately
	<u>OR</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.1 Initiate action to fully insert the control rod associated with the inoperable position indicator.	Immediately
	<p><u>AND</u></p> <p>A.2.2 Initiate action to disarm the control rod drive associated with the fully inserted control rod.</p>	Immediately

SURVEILLANCE REQUIREMENT

SURVEILLANCE	FREQUENCY
SR 3.9.4.1 Verify the required position indication has no "full-in" indication on each control rod that is not "full-in."	Each time the control rod is withdrawn from the "full-in" position

## 3.9 REFUELING OPERATIONS

## 3.9.5 Control Rod OPERABILITY—Refueling

LCO 3.9.5 Each withdrawn control rod shall be OPERABLE.

APPLICABILITY: MODE 5.

## ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more withdrawn control rods inoperable.	A.1 Initiate action to fully insert inoperable withdrawn control rods.	Immediately

## SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	<p>-----NOTE----- Not required to be performed until 7 days after the control rod is withdrawn. -----</p> <p>Insert each withdrawn control rod at least one notch.</p>	7 days
SR 3.9.5.2	Verify each withdrawn control rod scram accumulator pressure is $\geq 940$ psig.	7 days

### 3.9 REFUELING OPERATIONS

#### 3.9.6 Reactor Pressure Vessel (RPV) Water Level

LCO 3.9.6      RPV water level shall be  $\geq$  458 inches above RPV instrument zero.

APPLICABILITY:    During movement of irradiated fuel assemblies within the RPV,  
                          During movement of new fuel assemblies or handling of control rods within the RPV, when irradiated fuel assemblies are seated within the RPV.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RPV water level not within limit.	A.1      Suspend movement of fuel assemblies and handling of control rods within the RPV.	Immediately

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.6.1      Verify RPV water level is $\geq$ 458 inches above RPV instrument zero.	24 hours

### 3.9 REFUELING OPERATIONS

#### 3.9.7 Residual Heat Removal (RHR)—High Water Level

LCO 3.9.7 One RHR shutdown cooling subsystem shall be OPERABLE and in operation.

-----NOTE-----  
The required RHR shutdown cooling subsystem may be removed from operation for up to 2 hours per 8 hour period.  
-----

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level  $\geq$  458 inches above RPV instrument zero.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required RHR shutdown cooling subsystem inoperable.	A.1 Verify an alternate method of decay heat removal is available.	1 hour <u>AND</u> Once per 24 hours thereafter
B. Required Action and associated Completion Time of Condition A not met.	B.1 Suspend loading irradiated fuel assemblies into the RPV.	Immediately
	<u>AND</u>	
	B.2 Initiate action to restore secondary containment to OPERABLE status.	Immediately
	<u>AND</u>	
		(continued)



ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.3 Initiate action to restore one standby gas treatment subsystem for Unit 3 to OPERABLE status.	Immediately
	<u>AND</u> B.4 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately
C. No RHR shutdown cooling subsystem in operation.	C.1 Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation
	<u>AND</u> C.2 Monitor reactor coolant temperature.	<u>AND</u> Once per 12 hours thereafter  Once per hour

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.9.7.1    Verify one RHR shutdown cooling subsystem is operating.	12 hours

### 3.9 REFUELING OPERATIONS

#### 3.9.8 Residual Heat Removal (RHR)—Low Water Level

LCO 3.9.8 Two RHR shutdown cooling subsystems shall be OPERABLE, and one RHR shutdown cooling subsystem shall be in operation.

-----NOTE-----  
The required operating shutdown cooling subsystem may be removed from operation for up to 2 hours per 8 hour period.  
-----

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level < 458 inches above RPV instrument zero.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two required RHR shutdown cooling subsystems inoperable.	A.1 Verify an alternate method of decay heat removal is available for each inoperable required RHR shutdown cooling subsystem.	1 hour <u>AND</u> Once per 24 hours thereafter
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action to restore secondary containment to OPERABLE status.  <u>AND</u>	Immediately  (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 Initiate action to restore one standby gas treatment subsystem for Unit 3 to OPERABLE status.	Immediately
	<u>AND</u>	
	B.3 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately
C. No RHR shutdown cooling subsystem in operation.	C.1 Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation
	<u>AND</u>	<u>AND</u> Once per 12 hours thereafter
	C.2 Monitor reactor coolant temperature.	Once per hour

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.9.8.1    Verify one RHR shutdown cooling subsystem is operating.	12 hours

### 3.10 SPECIAL OPERATIONS

#### 3.10.1 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.1 The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown," may be suspended, to allow performance of an inservice leak or hydrostatic test provided the following MODE 3 LCOs are met:

- a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 3, and 4 of Table 3.3.6.2-1;
- b. LCO 3.6.4.1, "Secondary Containment";
- c. LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)"; and
- d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature > 212°F.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each requirement of the LCO.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	<p>A.1 -----NOTE----- Required Actions to be in MODE 4 include reducing average reactor coolant temperature to <math>\leq 212^{\circ}\text{F}</math>. -----</p> <p>Enter the applicable Condition of the affected LCO.</p>	Immediately
	<p><u>OR</u></p> <p>A.2.1 Suspend activities that could increase the average reactor coolant temperature or pressure.</p>	Immediately
	<p><u>AND</u></p> <p>A.2.2 Reduce average reactor coolant temperature to <math>\leq 212^{\circ}\text{F}</math>.</p>	24 hours

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.10.1.1 Perform the applicable SRs for the required MODE 3 LCOs.	According to the applicable SRs



### 3.10 SPECIAL OPERATIONS

#### 3.10.2 Reactor Mode Switch Interlock Testing

LCO 3.10.2 The reactor mode switch position specified in Table 1.1-1 for MODES 3, 4, and 5 may be changed to include the run, startup/hot standby, and refuel position, and operation considered not to be in MODE 1 or 2, to allow testing of instrumentation associated with the reactor mode switch interlock functions, provided:

- a. All control rods remain fully inserted in core cells containing one or more fuel assemblies; and
- b. No CORE ALTERATIONS are in progress.

APPLICABILITY: MODES 3 and 4 with the reactor mode switch in the run, startup/hot standby, or refuel position,  
MODE 5 with the reactor mode switch in the run or startup/hot standby position.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	A.1 Suspend CORE ALTERATIONS except for control rod insertion.	Immediately
	<u>AND</u>	
	A.2 Fully insert all insertable control rods in core cells containing one or more fuel assemblies.	1 hour
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3.1 Place the reactor mode switch in the shutdown position.	1 hour
	<p><u>OR</u></p> <p>A.3.2 -----NOTE----- Only applicable in MODE 5. -----</p> <p>Place the reactor mode switch in the refuel position.</p>	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.2.1 Verify all control rods are fully inserted in core cells containing one or more fuel assemblies.	12 hours
SR 3.10.2.2 Verify no CORE ALTERATIONS are in progress.	24 hours

### 3.10 SPECIAL OPERATIONS

#### 3.10.3 Single Control Rod Withdrawal—Hot Shutdown

LCO 3.10.3 The reactor mode switch position specified in Table 1.1-1 for MODE 3 may be changed to include the refuel position, and operation considered not to be in MODE 2, to allow withdrawal of a single control rod, provided the following requirements are met:

- a. LCO 3.9.2, "Refuel Position One-Rod-Out Interlock";
- b. LCO 3.9.4, "Control Rod Position Indication";
- c. All other control rods are fully inserted; and
- d. 1. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," MODE 5 requirements for Functions 1.a, 1.b, 7, 12, 13, and 14 of Table 3.3.1.1-1, and

LCO 3.9.5, "Control Rod OPERABILITY—Refueling,"

OR

2. All other control rods in a five by five array centered on the control rod being withdrawn are disarmed, at which time LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," MODE 3 requirements, may be changed to allow the single control rod to be withdrawn to be assumed the highest worth control rod.

APPLICABILITY: MODE 3 with the reactor mode switch in the refuel position.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each requirement of the LCO.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	<p>A.1 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Required Actions to fully insert all insertable control rods include placing the reactor mode switch in the shutdown position.</li> <li>2. Only applicable if the requirement not met is a required LCO.</li> </ol> <p>-----</p> <p>Enter the applicable Condition of the affected LCO.</p>	Immediately
	<u>OR</u>	
	<p>A.2.1 Initiate action to fully insert all insertable control rods.</p>	Immediately
	<p><u>AND</u></p> <p>A.2.2 Place the reactor mode switch in the shutdown position.</p>	1 hour

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.10.3.1 Perform the applicable SRs for the required LCOs.	According to the applicable SRs
SR 3.10.3.2 -----NOTE----- Not required to be met if SR 3.10.3.1 is satisfied for LCO 3.10.3.d.1 requirements. ----- Verify all control rods, other than the control rod being withdrawn, in a five by five array centered on the control rod being withdrawn, are disarmed.	24 hours
SR 3.10.3.3 Verify all control rods, other than the control rod being withdrawn, are fully inserted.	24 hours

### 3.10 SPECIAL OPERATIONS

#### 3.10.4 Single Control Rod Withdrawal—Cold Shutdown

LCO 3.10.4 The reactor mode switch position specified in Table 1.1-1 for MODE 4 may be changed to include the refuel position, and operation considered not to be in MODE 2, to allow withdrawal of a single control rod, and subsequent removal of the associated control rod drive (CRD) if desired, provided the following requirements are met:

- a. All other control rods are fully inserted;
- b. 1. LCO 3.9.2, "Refuel Position One-Rod-Out Interlock," and  
LCO 3.9.4, "Control Rod Position Indication,"

OR

- 2. A control rod withdrawal block is inserted;
- c. 1. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," MODE 5 requirements for Functions 1.a, 1.b, 7, 12, 13, and 14 of Table 3.3.1.1-1, and  
LCO 3.9.5, "Control Rod OPERABILITY—Refueling,"

OR

- 2. All other control rods in a five by five array centered on the control rod being withdrawn are disarmed, at which time LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," MODE 4 requirements, may be changed to allow the single control rod to be withdrawn to be assumed the highest worth control rod.

APPLICABILITY: MODE 4 with the reactor mode switch in the refuel position.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each requirement of the LCO.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met with the affected control rod insertable.	A.1 -----NOTES----- 1. Required Actions to fully insert all insertable control rods include placing the reactor mode switch in the shutdown position.  2. Only applicable if the requirement not met is a required LCO. ----- Enter the applicable Condition of the affected LCO.	Immediately
	<u>OR</u>	
	A.2.1 Initiate action to fully insert all insertable control rods.	Immediately
	<u>AND</u>	
	A.2.2 Place the reactor mode switch in the shutdown position.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more of the above requirements not met with the affected control rod not insertable.	B.1 Suspend withdrawal of the control rod and removal of associated CRD.	Immediately
	<u>AND</u>	
	B.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u>	
	B.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.4.1 Perform the applicable SRs for the required LCOs.	According to the applicable SRs
SR 3.10.4.2 -----NOTE----- Not required to be met if SR 3.10.4.1 is satisfied for LCO 3.10.4.c.1 requirements. ----- Verify all control rods, other than the control rod being withdrawn, in a five by five array centered on the control rod being withdrawn, are disarmed.	24 hours

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.10.4.3    Verify all control rods, other than the control rod being withdrawn, are fully inserted.	24 hours
SR 3.10.4.4    -----NOTE----- Not required to be met if SR 3.10.4.1 is satisfied for LCO 3.10.4.b.1 requirements. -----  Verify a control rod withdrawal block is inserted.	24 hours

### 3.10 SPECIAL OPERATIONS

#### 3.10.5 Single Control Rod Drive (CRD) Removal—Refueling

LCO 3.10.5 The requirements of LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation"; LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring"; LCO 3.9.1, "Refueling Equipment Interlocks"; LCO 3.9.2, "Refuel Position One Rod Out Interlock"; LCO 3.9.4, "Control Rod Position Indication"; and LCO 3.9.5, "Control Rod OPERABILITY—Refueling," may be suspended in MODE 5 to allow the removal of a single CRD associated with a control rod withdrawn from a core cell containing one or more fuel assemblies, provided the following requirements are met:

- a. All other control rods are fully inserted;
- b. All other control rods in a five by five array centered on the withdrawn control rod are disarmed;
- c. A control rod withdrawal block is inserted and LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," MODE 5 requirements, may be changed to allow the single control rod withdrawn to be assumed to be the highest worth control rod; and
- d. No other CORE ALTERATIONS are in progress.

APPLICABILITY: MODE 5 with LCO 3.9.5 not met.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	A.1 Suspend removal of the CRD mechanism.  <u>AND</u>	Immediately   (continued)

## ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u> A.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately

## SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.5.1	Verify all control rods, other than the control rod withdrawn for the removal of the associated CRD, are fully inserted.	24 hours
SR 3.10.5.2	Verify all control rods, other than the control rod withdrawn for the removal of the associated CRD, in a five by five array centered on the control rod withdrawn for the removal of the associated CRD, are disarmed.	24 hours
SR 3.10.5.3	Verify a control rod withdrawal block is inserted.	24 hours
SR 3.10.5.4	Perform SR 3.1.1.1.	According to SR 3.1.1.1

(continued)

**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE	FREQUENCY
SR 3.10.5.5 Verify no CORE ALTERATIONS are in progress.	24 hours

### 3.10 SPECIAL OPERATIONS

#### 3.10.6 Multiple Control Rod Withdrawal—Refueling

LCO 3.10.6 The requirements of LCO 3.9.3, "Control Rod Position"; LCO 3.9.4, "Control Rod Position Indication"; and LCO 3.9.5, "Control Rod OPERABILITY—Refueling," may be suspended, and the "full in" position indicators may be bypassed for any number of control rods in MODE 5, to allow withdrawal of these control rods, removal of associated control rod drives (CRDs), or both, provided the following requirements are met:

- a. The four fuel assemblies are removed from the core cells associated with each control rod or CRD to be removed;
- b. All other control rods in core cells containing one or more fuel assemblies are fully inserted; and
- c. Fuel assemblies shall only be loaded in compliance with an approved spiral reload sequence.

APPLICABILITY: MODE 5 with LCO 3.9.3, LCO 3.9.4, or LCO 3.9.5 not met.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	A.1 Suspend withdrawal of control rods and removal of associated CRDs.	Immediately
	<u>AND</u>	
	A.2 Suspend loading fuel assemblies.	Immediately
	<u>AND</u>	(continued)

# ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3.1 Initiate action to fully insert all control rods in core cells containing one or more fuel assemblies.	Immediately
	<u>OR</u> A.3.2 Initiate action to satisfy the requirements of this LCO.	Immediately

# SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.6.1 Verify the four fuel assemblies are removed from core cells associated with each control rod or CRD removed.	24 hours
SR 3.10.6.2 Verify all other control rods in core cells containing one or more fuel assemblies are fully inserted.	24 hours
SR 3.10.6.3 -----NOTE----- Only required to be met during fuel loading. ----- Verify fuel assemblies being loaded are in compliance with an approved spiral reload sequence.	24 hours

### 3.10 SPECIAL OPERATIONS

#### 3.10.7 Control Rod Testing—Operating

LCO 3.10.7 The requirements of LCO 3.1.6, "Rod Pattern Control," may be suspended to allow performance of SDM demonstrations, control rod scram time testing, control rod friction testing, and the Startup Test Program, provided:

- a. The banked position withdrawal sequence requirements of SR 3.3.2.1.8 are changed to require the control rod sequence to conform to the specified test sequence.

OR

- b. The RWM is bypassed; the requirements of LCO 3.3.2.1, "Control Rod Block Instrumentation," Function 2 are suspended; and conformance to the approved control rod sequence for the specified test is verified by a second licensed operator or other qualified member of the technical staff.

APPLICABILITY: MODES 1 and 2 with LCO 3.1.6 not met.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Suspend performance of the test and exception to LCO 3.1.6.	Immediately

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.10.7.1 -----NOTE----- Not required to be met if SR 3.10.7.2 satisfied. -----</p> <p>Verify movement of control rods is in compliance with the approved control rod sequence for the specified test by a second licensed operator or other qualified member of the technical staff.</p>	<p>During control rod movement</p>
<p>SR 3.10.7.2 -----NOTE----- Not required to be met if SR 3.10.7.1 satisfied. -----</p> <p>Verify control rod sequence input to the RWM is in conformance with the approved control rod sequence for the specified test.</p>	<p>Prior to control rod movement</p>



### 3.10 SPECIAL OPERATIONS

#### 3.10.8 SHUTDOWN MARGIN (SDM) Test - Refueling

LCO 3.10.8

The reactor mode switch position specified in Table 1.1-1 for MODE 5 may be changed to include the startup/hot standby position, and operation considered not to be in MODE 2, to allow SDM testing, provided the following requirements are met:

- a. LCO 3.3.1.1, "Reactor Protection System Instrumentation," MODE 2 requirements for Functions 2.a, 2.d and 2.e of Table 3.3.1.1-1;
- b. 1. LCO 3.3.2.1, "Control Rod Block Instrumentation," MODE 2 requirements for Function 2 of Table 3.3.2.1-1, with the banked position withdrawal sequence requirements of SR 3.3.2.1.8 changed to require the control rod sequence to conform to the SDM test sequence,

OR

- 2. Conformance to the approved control rod sequence for the SDM test is verified by a second licensed operator or other qualified member of the technical staff;
- c. Each withdrawn control rod shall be coupled to the associated CRD;
- d. All control rod withdrawals during out of sequence control rod moves shall be made in notch out mode;
- e. No other CORE ALTERATIONS are in progress; and
- f. CRD charging water header pressure  $\geq$  940 psig.

APPLICABILITY: MODE 5 with the reactor mode switch in startup/hot standby position.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Separate Condition entry is allowed for each control rod. -----</p> <p>One or more control rods not coupled to its associated CRD.</p>	<p>A.1 -----NOTE----- Rod worth minimizer may be bypassed as allowed by LCO 3.3.2.1, "Control Rod Block Instrumentation," if required, to allow insertion of inoperable control rod and continued operation. -----</p> <p>Fully insert inoperable control rod.</p>	3 hours
	<p><u>AND</u></p> <p>A.2 Disarm the associated CRD.</p>	4 hours
	<p>B.1 Place the reactor mode switch in the shutdown or refuel position.</p>	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.8.1 Perform the MODE 2 applicable SRs for LCO 3.3.1.1, Functions 2.a, 2.d and 2.e of Table 3.3.1.1-1.	According to the applicable SRs
SR 3.10.8.2 -----NOTE----- Not required to be met if SR 3.10.8.3 satisfied. ----- Perform the MODE 2 applicable SRs for LCO 3.3.2.1, Function 2 of Table 3.3.2.1-1.	According to the applicable SRs
SR 3.10.8.3 -----NOTE----- Not required to be met if SR 3.10.8.2 satisfied. ----- Verify movement of control rods is in compliance with the approved control rod sequence for the SDM test by a second licensed operator or other qualified member of the technical staff.	During control rod movement
SR 3.10.8.4 Verify no other CORE ALTERATIONS are in progress.	12 hours

(continued)

**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE	FREQUENCY
<p>SR 3.10.8.5    Verify each withdrawn control rod does not go to the withdrawn overtravel position.</p>	<p>Each time the control rod is withdrawn to "full out" position</p> <p><u>AND</u></p> <p>Prior to satisfying LCO 3.10.8.c requirement after work on control rod or CRD System that could affect coupling</p>
<p>SR 3.10.8.6    Verify CRD charging water header pressure <math>\geq</math> 940 psig.</p>	<p>7 days</p>

## 4.0 DESIGN FEATURES

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### 4.1 Site

#### 4.1.1 Site and Exclusion Area Boundaries

The site and exclusion area boundaries shall be as shown in Figure 4.1-1.

#### 4.1.2 Low Population Zone (LPZ)

The LPZ shall be a 7300 meter radius from the plant stack.

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### 4.2 Reactor Core

#### 4.2.1 Fuel Assemblies

The reactor shall contain 764 fuel assemblies. Each assembly shall consist of a matrix of zircaloy or ZIRLO fuel rods with an initial composition of natural or slightly enriched uranium dioxide ( $UO_2$ ) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with NRC staff approved codes and methods and have been shown by tests or analyses to comply with all safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

#### 4.2.2 Control Rod Assemblies

The reactor core shall contain 185 cruciform shaped control rod assemblies. The control materials shall be boron carbide and hafnium metal as approved by the NRC.

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(continued)

## 4.0 DESIGN FEATURES (continued)

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### 4.3 Fuel Storage

#### 4.3.1 Criticality

4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

- a. Fuel assemblies having a maximum  $k$ -infinity of 1.362 in the normal reactor core configuration at cold conditions;
- b.  $k_{eff} \leq 0.95$  if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 10.3 of the UFSAR; and
- c. A nominal 6.280 inch center to center distance between fuel assemblies placed in the storage racks.

4.3.1.2 The new fuel storage racks shall not be used for fuel storage. The new fuel shall be stored in the spent fuel storage racks.

#### 4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below plant elevation 219 ft.

#### 4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 3819 fuel assemblies.

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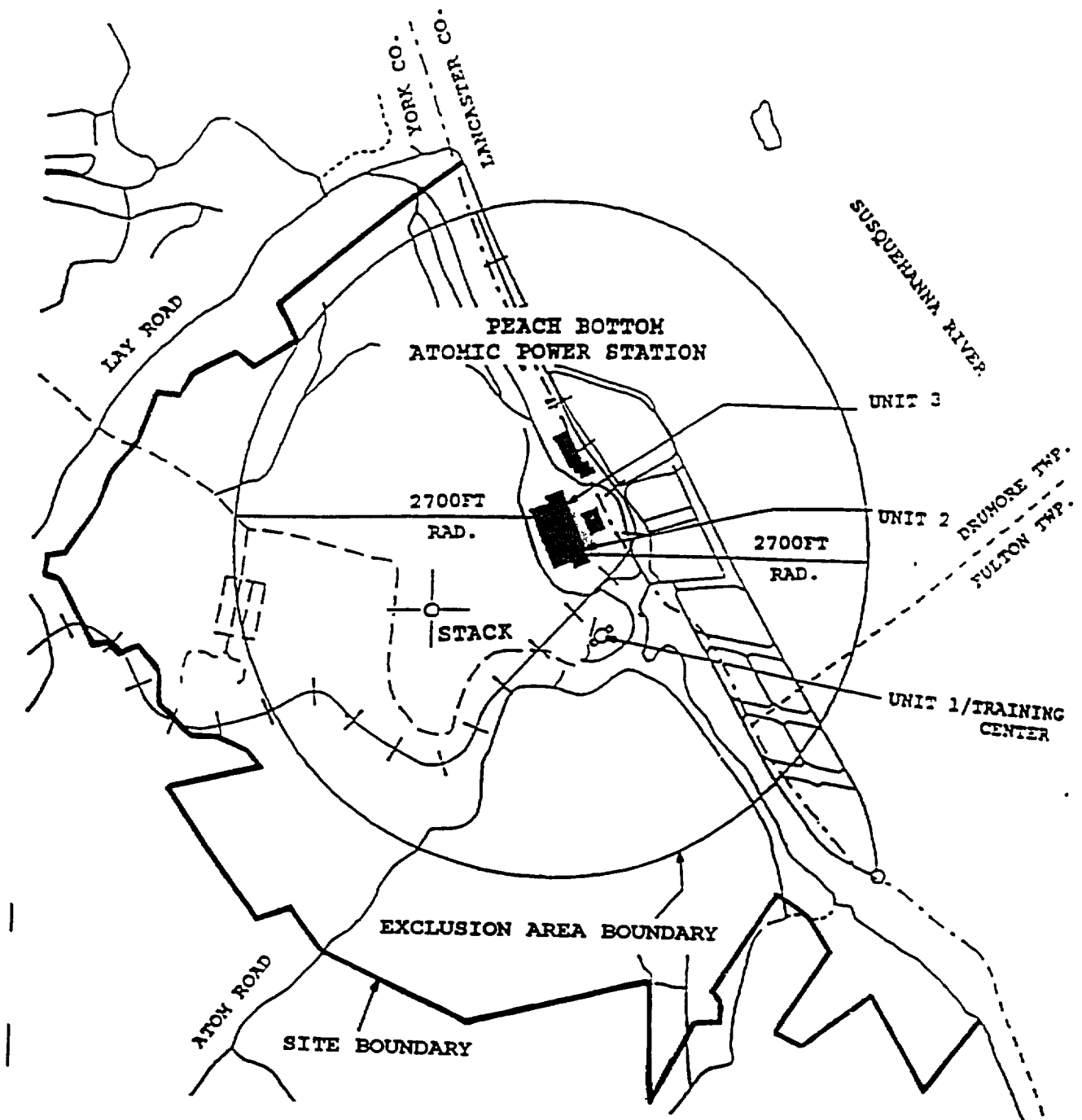


Figure 4.1-1 (page 1 of 1)  
Site and Exclusion Area Boundaries

## 5.0 ADMINISTRATIVE CONTROLS

### 5.1 Responsibility

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- 5.1.1 The Plant Manager shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

The Plant Manager or his designee shall approve, prior to implementation, each proposed test, experiment, or modification to systems or equipment that affect nuclear safety.

- 5.1.2 The Shift Supervisor shall be responsible for the control room command function. During any absence of the Shift Supervisor from the control room while the unit is in MODE 1, 2, or 3, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the Shift Supervisor from the control room while the unit is in MODE 4 or 5, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.
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## 5.0 ADMINISTRATIVE CONTROLS

### 5.2 Organization

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#### 5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the UFSAR;
- b. The Plant Manager shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;
- c. The Vice President—Peach Bottom Atomic Power Station shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and
- d. The individuals who train the operating staff, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

#### 5.2.2 Unit Staff

The unit staff organization shall also include the following:

(continued)

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## 5.2 Organization

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### 5.2.2 Unit Staff (continued)

- a. A total of five non-licensed Operators shall be assigned for PBAPS Units 2 and 3 at all times.
- b. Each on-duty shift crew composition may be less than the minimum requirements of 10 CFR 50.54(m)(2)(i) and Specification 5.2.2.a and 5.2.2.f for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.
- c. An individual qualified in radiation protection procedures shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.
- d. Administrative procedures shall be developed and implemented to limit the working hours of personnel who perform safety related functions (e.g., licensed Senior Reactor Operators (SROs), licensed Reactor Operators (ROs), health physicists, non-licensed operators, and key maintenance personnel).

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(continued)

## 5.2 Organization

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### 5.2.2 Unit Staff (continued)

The controls shall include guidelines on working hours that ensure adequate shift coverage shall be maintained without routine heavy use of overtime.

Any deviation from the above guidelines shall be authorized in advance by the Plant Manager or the Plant Manager's designee, in accordance with approved administrative procedures, and with documentation of the basis for granting the deviation. Routine deviation from the working hour guidelines shall not be authorized.

Controls shall be included in the procedures to require a periodic independent review be conducted to ensure that excessive hours have not been assigned.

- e. The Senior Manager-Operations or an Operations Manager shall hold an SRO license.
  - f. An individual shall provide advisory technical support to the unit operations shift crew in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. This individual shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.
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5.0 ADMINISTRATIVE CONTROLS

5.3 Unit Staff Qualifications

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- 5.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions described in the UFSAR, with the following exceptions: 1) the Manager-Radiation Protection shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and 2) the education and experience eligibility requirements for operator license applicants (described in Exelon letter RS-02-100, dated June 19, 2002), and changes thereto, shall be approved by the NRC and described in an applicable station training procedure.
- 5.3.2 For the purpose of 10 CFR 55.4, a licensed Senior Reactor Operator (SRO) and a licensed Reactor Operator (RO) are those individuals who, in addition to meeting the requirements of TS 5.3.1, perform the functions described in 10 CFR 50.54(m).
-

## 5.0 ADMINISTRATIVE CONTROLS

### 5.4 Procedures

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- 5.4.1 Written procedures shall be established, implemented, and maintained covering the following activities:
- a. The applicable procedures recommended in Regulatory Guide 1.33, Appendix A, November 1972;
  - b. The emergency operating procedures required to implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1, as stated in Generic Letter 82-33;
  - c. Quality assurance for effluent and environmental monitoring;
  - d. Fire Protection Program implementation; and
  - e. All programs specified in Specification 5.5.
-

## 5.0 ADMINISTRATIVE CONTROLS

### 5.5 Programs and Manuals

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The following programs shall be established, implemented, and maintained.

#### 5.5.1 Offsite Dose Calculation Manual (ODCM)

- a. The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and
- b. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities, and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release reports required by Specification 5.6.2 and Specification 5.6.3.
- c. Licensee initiated changes to the ODCM:
  1. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:

Sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and

A determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;
  2. Shall become effective after review and acceptance by the Plant Operations Review Committee and the approval of the Plant Manager; and

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(continued)

## 5.5 Programs and Manuals

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### 5.5.1 Offsite Dose Calculation Manual (ODCM) (continued)

3. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

### 5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include Core Spray, High Pressure Coolant Injection, Residual Heat Removal, Reactor Core Isolation Cooling, and Reactor Water Cleanup. The program shall include the following:

- a. Preventive maintenance and periodic visual inspection requirements; and
- b. System leak test requirements for each system, to the extent permitted by system design and radiological conditions, at refueling cycle intervals or less.

### 5.5.3 Post Accident Sampling

This program provides controls that ensure the capability to obtain and analyze reactor coolant and containment atmosphere samples under accident conditions and radioactive iodine and particulates in plant gaseous effluents under accident conditions. The program shall include the following:

- a. Training of personnel;
- b. Procedures for sampling and analysis; and
- c. Provisions for maintenance of sampling and analysis equipment.

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(continued)

## 5.5 Programs and Manuals (continued)

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### 5.5.4 Radioactive Effluent Controls Program

This program conforms to 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable. The program shall be contained in the ODCM, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- a. Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM;
- b. Limitations on the concentrations of radioactive material released in liquid effluents to unrestricted areas, conforming to 10 times the concentration values in Appendix B, Table 2, Column 2 to 10 CFR 20.1001-20.2402;
- c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters in the ODCM;
- d. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas, conforming to 10 CFR 50, Appendix I;
- e. Determination of cumulative and projected dose contributions from liquid radioactive effluents and determination of cumulative dose contributions from gaseous radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days;
- f. Limitations on the functional capability and use of the liquid effluent treatment systems to ensure that appropriate portions of these systems are used to reduce releases of radioactivity when projected doses averaged over one month would exceed 0.12 mrem to the total body or 0.4 mrem to any organ (combined total from the two reactors at the site);
- g. Limitations to ensure gaseous effluents shall be processed, prior to release, through the appropriate gaseous effluent treatment systems as described in the ODCM;

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(continued)



## 5.5 Programs and Manuals

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### 5.5.4 Radioactive Effluent Controls Program (continued)

- h. Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the site boundary shall be in accordance with the following:
  - 1. For noble gases: less than or equal to a dose rate of 500 mrem/yr to the total body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and
  - 2. For iodine-131, iodine-133, tritium, and for all radionuclides in particulate form with half lives > 8 days: less than or equal to a dose rate of 1500 mrem/yr to any organ;
- i. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I;
- j. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I; and
- k. Limitations on the annual dose or dose commitment to any member of the public, beyond the site boundary, due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

The provisions of SR 3.0.2 and 3.0.3 are applicable to the Radioactive Effluent Controls Program surveillance frequency.

### 5.5.5 Component Cyclic or Transient Limit

This program provides controls to track the UFSAR, Table 4.2.4, cyclic and transient occurrences to ensure that components are maintained within the design limits.

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(continued)

## 5.5 Programs and Manuals (continued)

### 5.5.6 Inservice Testing Program

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components including applicable supports. The program shall include the following:

- a. Testing frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda are as follows:

<u>ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice testing activities</u>	<u>Required Frequencies for performing inservice testing activities</u>
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days
Biennially or every 2 years	At least once per 732 days

- b. The provisions of SR 3.0.2 are applicable to the Frequencies for performing inservice testing activities;
- c. The provisions of SR 3.0.3 are applicable to inservice testing activities; and
- d. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any TS.

### 5.5.7 Ventilation Filter Testing Program (VFTP)

The VFTP shall establish the required testing of Engineered Safety Feature (ESF) filter ventilation systems.

Tests described in Specifications 5.5.7.a, 5.5.7.b, and 5.5.7.c shall be performed:

(continued)

## 5.5 Programs and Manuals

### 5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

- 1) Once per 12 months for standby service or after 720 hours of system operation; and,
- 2) After each complete or partial replacement of the HEPA filter train or charcoal adsorber filter; after any structural maintenance on the system housing; and, following significant painting, fire, or chemical release in any ventilation zone communicating with the system while it is in operation.

Tests described in Specifications 5.5.7.d and 5.5.7.e shall be performed once per 24 months.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.

- a. Demonstrate for each of the ESF systems that an inplace test of the HEPA filters shows a penetration and system bypass < 1.0% when tested in accordance with Regulatory Guide 1.52, Revision 2, Section 5c, and ASME N510-1989, Sections 6 (Standby Gas Treatment (SGT) System only) and 10, at the system flowrate specified below.

<u>ESF Ventilation System</u>	<u>Flowrate (cfm)</u>
SGT System	7200 to 8800
Main Control Room Emergency Ventilation (MCREV) System	2700 to 3300

(continued)

## 5.5 Programs and Manuals

### 5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

- b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < 1.0% when tested in accordance with Regulatory Guide 1.52, Revision 2, Section 5d, and ASME N510-1989, Sections 6 (SGT System only) and 11, at the system flowrate specified below.

<u>ESF Ventilation System</u>	<u>Flowrate (cfm)</u>
SGT System	7200 to 8800
MCREV System	2700 to 3300

- c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, Section 6b, shows the methyl iodide penetration less than the value specified below when tested in accordance with the laboratory testing criteria of ASTM D3803-1989 at a temperature of 30 degrees C [86 degrees F], face velocity, and the relative humidity specified below.

	<u>ESF Ventilation System</u>	
	<u>SGT System</u>	<u>MCREV System</u>
Penetration (%)	5	5
Face Velocity (FPM)	60	57
Relative Humidity: (%)	70	95

(continued)

## 5.5 Programs and Manuals

### 5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

- d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters (if installed), and the charcoal adsorbers is less than the value specified below when tested at the system flowrate specified below.

<u>ESF Ventilation System</u>	<u>Delta P (inches wg)</u>	<u>Flowrate (cfm)</u>
SGT System	< 3.9	7200 to 8800
MCREV System	< 8	2700 to 3300

- e. Demonstrate that the heaters for the SGT System dissipate  $\geq 40$  kw.

### 5.5.8 Explosive Gas Monitoring Program

This program provides controls for potentially explosive gas mixtures contained downstream of the off-gas recombiners.

The program shall include:

- a. The limit for the concentration of hydrogen downstream of the off-gas recombiners and a surveillance program to ensure the limit is maintained. This limit shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion);

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas Monitoring Program surveillance frequencies.

### 5.5.9 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

(continued)

## 5.5 Programs and Manuals

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### 5.5.9 Diesel Fuel Oil Testing Program (continued)

- a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:
  - 1. an API gravity or an absolute specific gravity within limits,
  - 2. kinematic viscosity, when required, and a flash point within limits for ASTM 2-D fuel oil, and
  - 3. a clear and bright appearance with proper color or a water and sediment content within limits;
- b. Other properties for ASTM 2-D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and
- c. Total particulate concentration of the fuel oil is  $\leq 10$  mg/l when tested every 31 days in accordance with ASTM D2276, Method A, except that the filters specified in the ASTM method may have a nominal pore size of up to three (3) microns.

### 5.5.10 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:

A change in the TS incorporated in the license; or

A change to the UFSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the UFSAR.

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(continued)

## 5.5 Programs and Manuals

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### 5.5.10 Technical Specifications (TS) Bases Control Program (continued)

- d. Proposed changes that meet the criteria of b. above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

### 5.5.11 Safety Function Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate limitations and remedial or compensatory actions may be identified to be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6.

a. The SFDP shall contain the following:

1. Provisions for cross division checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected;
2. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;
3. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and
4. Other appropriate limitations and remedial or compensatory actions.

- b. A loss of safety function exists when, assuming no concurrent single failure, a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

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(continued)

## 5.5 Programs and Manuals

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### 5.5.11 Safety Function Determination Program (SFDP) (continued)

1. A required system redundant to system(s) supported by the inoperable support system is also inoperable; or
  2. A required system redundant to system(s) in turn supported by the inoperable supported system is also inoperable; or
  3. A required system redundant to support system(s) for the supported systems (b.1) and (b.2) above is also inoperable.
- c. The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

### 5.5.12 Primary Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, as modified by the following exceptions to NEI 94-01, Rev. 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J":

- a. Section 10.2: MSIV leakage is excluded from the combined total of 0.6  $L_a$  for the Type B and C tests.
- b. Section 9.2.3: The first Type A test performed after the December, 1991 Type A test shall be performed no later than December, 2006.

The peak calculated containment internal pressure for the design basis loss of coolant accident,  $P_a$ , is 49.1 psig.

The maximum allowable primary containment leakage rate,  $L_a$ , at  $P_a$ , shall be 0.5% of primary containment air weight per day.

Leakage Rate acceptance criteria are:

- a. Primary Containment leakage rate acceptance criterion is  $\leq 1.0 L_a$ . During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are  $\leq 0.60 L_a$  for the Type B and Type C tests and  $\leq 0.75 L_a$  for Type A tests;

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(continued)



## 5.5 Programs and Manuals

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### 5.5.12 Primary Containment Leakage Rate Testing Program (continued)

b. Air lock testing acceptance criteria are:

- 1) Overall air lock leakage rate is  $\leq 9000$  scc/min when tested at  $\geq P_1$ .

c. MSIV leakage acceptance criteria are as specified in SR 3.6.1.3.14.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Primary Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.

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## 5.0 ADMINISTRATIVE CONTROLS

### 5.6 Reporting Requirements

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The following reports shall be submitted in accordance with 10 CFR 50.4.

#### 5.6.1 Occupational Radiation Exposure Report

-----NOTE-----  
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.  
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A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving an annual deep dose equivalent > 100 mrem and the associated collective deep dose equivalent (reported in person-rem) according to work and job functions (e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling). This tabulation supplements the requirements of 10 CFR 20.2206. The dose assignments to various duty functions may be estimated based on pocket dosimeter, thermoluminescence dosimeter (TLD), or film badge measurements. Small exposures totalling < 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total deep dose equivalent received from external sources should be assigned to specific major work functions. The report shall be submitted by March 31 of each year.

#### 5.6.2 Annual Radiological Environmental Operating Report

-----NOTE-----  
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.  
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The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 31 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring activities for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

(continued)

## 5.6 Reporting Requirements

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### 5.6.2 Annual Radiological Environmental Operating Report (continued)

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

### 5.6.3 Radioactive Effluent Release Report

-----NOTE-----  
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.  
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The Radioactive Effluent Release Report covering the operation of the unit during the previous year shall be submitted prior to May 1 of each year in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

### 5.6.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis no later than the 15th of each month following the calendar month covered by the report.

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(continued)

5.6 Reporting Requirements (continued)

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5.6.5 CORE OPERATING LIMITS REPORT (COLR)

- a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:
  1. The Average Planar Linear Heat Generation Rate for Specification 3.2.1;
  2. The Minimum Critical Power Ratio for Specifications 3.2.2 and 3.3.2.1;
  3. The Linear Heat Generation Rate for Specification 3.2.3; and
  4. The Control Rod Block Instrumentation for Specification 3.3.2.1.
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:
  1. NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (latest approved version as specified in the COLR);
  2. NEDC-32162P, "Maximum Extended Load Line Limit and ARTS Improvement Program Analyses for Peach Bottom Atomic Power Station Units 2 and 3," Revision 2, March, 1995;
  3. PECO-FMS-0001-A, "Steady-State Thermal Hydraulic Analysis of Peach Bottom Units 2 and 3 using the FIBWR Computer Code";
  4. PECO-FMS-0002-A, "Method for Calculating Transient Critical Power Ratios for Boiling Water Reactors (RETRAN-TCPPECO)";
  5. PECO-FMS-0003-A, "Steady-State Fuel Performance Methods Report";
  6. PECO-FMS-0004-A, "Methods for Performing BWR Systems Transient Analysis";

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## 5.6 Reporting Requirements

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### 5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

7. PECO-FMS-0005-A, "Methods for Performing BWR Steady-State Reactor Physics Analysis"; and
  8. PECO-FMS-0006-A, "Methods for Performing BWR Reload Safety Evaluations."
- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
- d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

### 5.6.6 Post Accident Monitoring (PAM) Instrumentation Report

When a report is required by Condition B or F of LCO 3.3.3.1, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

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5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Areas

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As provided in paragraph 20.1601(c) of 10 CFR Part 20, the following controls shall be applied to high radiation areas in place of the controls required by paragraph 20.1601(a) and (b) of 10 CFR Part 20:

5.7.1 High Radiation Areas with Dose Rates not Exceeding 1.0 rem/hour (at 30 centimeters from the radiation sources or from any surface penetrated by the radiation):

- a. Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.
- b. Access to, and activities in, each such area shall be controlled by means of a Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.
- c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while otherwise performing their assigned duties provided that they are following plant radiation protection procedures for entry to, exit from, and work in such areas.
- d. Each individual or group entering such an area shall possess:
  1. A radiation monitoring device that continuously displays radiation dose rates in the area ("radiation monitoring and indicating device"), or
  2. A radiation monitoring device that continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached ("alarming dosimeter"), with an appropriate alarm setpoint, or
  3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, or

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(continued)

5.7 High Radiation Areas

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5.7.1 High Radiation Areas with Dose Rates not Exceeding 1.0 rem/hour (at 30 centimeters from the radiation sources or from any surface penetrated by the radiation): (continued)

4. A self-reading dosimeter (e.g., pocket ion chamber or electronic dosimeter) and,

(i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel radiation exposure within the area, or

(ii) Be under the surveillance, as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel shall receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation), but less than 500 rads/hour (at 1 meter from the radiation source or from any surface penetrated by the radiation)

a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:

1. All such door and gate keys shall be maintained under the administrative control of the shift supervisor, radiation protection manager, or his or her designee.

2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.

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## 5.7 High Radiation Areas

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### 5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation), but less than 500 rads/hour (at 1 meter from the radiation source or from any surface penetrated by the radiation) (continued)

- b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.
- c. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP or equivalent while performing radiation surveys in such areas provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
- d. Each individual (whether alone or in a group) entering such an area shall possess:
  1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or
  2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area with the means to communicate with and control every individual in the area, or
  3. A self-reading dosimeter (e.g., pocket ion chamber or electronic dosimeter) and,
    - (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or

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(continued)



## 5.7 High Radiation Areas

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### 5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation), but less than 500 rads/hour (at 1 meter from the radiation source or from any surface penetrated by the radiation) (continued)

- (ii) Be under the surveillance, as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with and control every individual in the area.
  - 4. In those cases where the options of Specifications 5.7.2.d.2 and 5.7.2.d.3, above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displays radiation dose rates in the area.
  - e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel shall receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.
  - f. Such individual areas that are within a larger area where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate, nor continuously guarded, but shall be barricaded, conspicuously posted, and a clearly visible flashing light shall be activated at the area as a warning device.
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