

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM

3.5.1 ECCS – Operating

LC0 3.5.1 Each ECCS injection/spray subsystem and the Automatic Depressurization System (ADS) function of six safety/relief valves shall be OPERABLE.

APPLICABILITY: MODE 1,  
MODES 2 and 3, except high pressure coolant injection (HPCI) and ADS valves are not required to be OPERABLE with reactor steam dome pressure  $\leq$  150 psig.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One low pressure ECCS injection/spray subsystem inoperable.</p> <p><u>OR</u></p> <p>One low pressure coolant injection (LPCI) pump in both LPCI subsystems inoperable.</p>	<p>A.1 Restore low pressure ECCS injection/spray subsystem(s) to OPERABLE status.</p>	<p>7 days</p>
<p>B. Required Action and associated Completion Time of Condition A not met.</p>	<p>B.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>B.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. HPCI System inoperable.</p>	<p>C.1 Verify by administrative means RCIC System is OPERABLE.</p> <p><u>AND</u></p> <p>C.2 Restore HPCI System to OPERABLE status.</p>	<p>Immediately</p> <p>14 days</p>
<p>D. HPCI System inoperable.</p> <p><u>AND</u></p> <p>Condition A entered.</p>	<p>D.1 Restore HPCI System to OPERABLE status.</p> <p><u>OR</u></p> <p>D.2 Restore low pressure ECCS injection/spray subsystem(s) to OPERABLE status.</p>	<p>72 hours</p> <p>72 hours</p>
<p>E. One required ADS valve inoperable.</p>	<p>E.1 Restore required ADS valve to OPERABLE status.</p>	<p>14 days</p>
<p>F. One required ADS valve inoperable.</p> <p><u>AND</u></p> <p>Condition A entered.</p>	<p>F.1 Restore required ADS valve to OPERABLE status.</p> <p><u>OR</u></p> <p>F.2 Restore low pressure ECCS injection/spray subsystem(s) to OPERABLE status.</p>	<p>72 hours</p> <p>72 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>G. Required Action and associated Completion Time of Condition C, D, E, or F not met.</p> <p><u>OR</u></p> <p>Two or more required ADS valves inoperable.</p>	<p>G.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>G.2 Reduce reactor steam dome pressure to ≤ 150 psig.</p>	<p>12 hours</p> <p>36 hours</p>
<p>H. Two or more low pressure ECCS injection/spray subsystems inoperable for reasons other than Condition A.</p> <p><u>OR</u></p> <p>HPCI System and one or more required ADS valves inoperable.</p>	<p>H.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.5.1.1 Verify, for each ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve.</p>	<p>31 days</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.1.2 -----NOTE-----                      Low pressure coolant injection (LPCI) subsystems may be considered OPERABLE during alignment and operation for decay heat removal with reactor steam dome pressure less than the Residual Heat Removal (RHR) cut in permissive pressure in MODE 3, if capable of being manually realigned and not otherwise inoperable.                      -----                      Verify each ECCS injection/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.</p>	<p>31 days</p>
<p>SR 3.5.1.3 Verify ADS pneumatic supply header pressure is <math>\geq 95</math> psig.</p>	<p>31 days</p>
<p>SR 3.5.1.4 Verify the RHR System cross tie valves are closed and power is removed from the electrical valve operator.</p>	<p>31 days</p>
<p>SR 3.5.1.5 Cycle open and closed each LPCI motor operated valve independent power supply battery charger AC input breaker and verify each LPCI inverter output voltage is <math>\geq 576</math> V and <math>\leq 624</math> V while supplying the respective bus.</p>	<p>31 days</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY																
SR 3.5.1.6	<p>-----NOTE----- Not required to be performed if performed within the previous 31 days. -----</p> <p>Verify each recirculation pump discharge valve cycles through one complete cycle of full travel or is de-energized in the closed position.</p>	Once each startup prior to exceeding 25% RTP																
SR 3.5.1.7	<p>Verify the following ECCS pumps develop the specified flow rate against a system head corresponding to the specified reactor pressure above primary containment pressure.</p> <table border="1"> <thead> <tr> <th>SYSTEM</th> <th>FLOW RATE</th> <th>NO. OF PUMPS</th> <th>SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE ABOVE PRIMARY CONTAINMENT PRESSURE OF</th> </tr> </thead> <tbody> <tr> <td>Core</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Spray</td> <td>≥ 4265 gpm</td> <td>1</td> <td>≥ 113 psi</td> </tr> <tr> <td>LPCI</td> <td>≥ 7700 gpm</td> <td>1</td> <td>≥ 20 psi</td> </tr> </tbody> </table>	SYSTEM	FLOW RATE	NO. OF PUMPS	SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE ABOVE PRIMARY CONTAINMENT PRESSURE OF	Core				Spray	≥ 4265 gpm	1	≥ 113 psi	LPCI	≥ 7700 gpm	1	≥ 20 psi	In accordance with the Inservice Testing Program
SYSTEM	FLOW RATE	NO. OF PUMPS	SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE ABOVE PRIMARY CONTAINMENT PRESSURE OF															
Core																		
Spray	≥ 4265 gpm	1	≥ 113 psi															
LPCI	≥ 7700 gpm	1	≥ 20 psi															
SR 3.5.1.8	<p>-----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify, with reactor pressure ≤ 1040 psig and ≥ 970 psig, the HPCI pump can develop a flow rate ≥ 3400 gpm against a system head corresponding to reactor pressure.</p>	In accordance with the Inservice Testing Program																

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.1.9 -----NOTE-----            Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test.            -----            Verify, with reactor pressure <math>\leq</math> 165 psig, the HPCI pump can develop a flow rate <math>\geq</math> 3400 gpm against a system head corresponding to reactor pressure.</p>	<p>24 months</p>
<p>SR 3.5.1.10 -----NOTES-----            1. For the HPCI System, not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test.            2. Vessel injection/spray may be excluded.            -----            Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.</p>	<p>24 months</p>
<p>SR 3.5.1.11 -----NOTE-----            Valve actuation may be excluded.            -----            Verify the ADS actuates on an actual or simulated automatic initiation signal.</p>	<p>24 months</p>
<p>SR 3.5.1.12 Verify each LPCI motor operated valve independent power supply inverter capacity is adequate to supply and maintain in OPERABLE status the required emergency loads for the design duty cycle.</p>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.1.13 -----NOTE-----            Not required to be performed until 12 hours            after reactor steam pressure and flow are            adequate to perform the test.            -----            Verify each required ADS valve opens when            manually actuated.</p>	<p>24 months on a            STAGGERED TEST            BASIS for each            valve solenoid</p>

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM

3.5.2 ECCS – Shutdown

LC0 3.5.2 Two low pressure ECCS injection/spray subsystems shall be OPERABLE.

APPLICABILITY: MODE 4,  
MODE 5, except with the spent fuel storage pool gates removed and water level  $\geq$  22 ft 2 inches over the top of the reactor pressure vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required low pressure ECCS injection/spray subsystem inoperable.	A.1 Restore required low pressure ECCS injection/spray subsystem to OPERABLE status.	4 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action to suspend operations with a potential for draining the reactor vessel (OPDRVs).	Immediately
C. Two required low pressure ECCS injection/spray subsystems inoperable.	C.1 Initiate action to suspend OPDRVs. <u>AND</u> C.2 Restore one required low pressure ECCS injection/spray subsystem to OPERABLE status.	Immediately  4 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action C.2 and associated Completion Time not met.	D.1 Initiate action to restore secondary containment to OPERABLE status.	Immediately
	<u>AND</u> D.2 Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	<u>AND</u> D.3 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.2.1 Verify, for each required low pressure coolant injection (LPCI) subsystem, the suppression pool water level is $\geq$ 10.33 ft.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.2.2    Verify, for each required core spray (CS) subsystem, the:</p> <p>    a.    Suppression pool water level is <math>\geq 10.33</math> ft; or</p> <p>    b.    -----NOTE-----           Only one required CS subsystem may take credit for this option during OPDRVs.           -----</p> <p>          The water level in each condensate storage tank is <math>\geq 324</math> inches.</p>	<p>12 hours</p>
<p>SR 3.5.2.3    Verify, for each required ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve.</p>	<p>31 days</p>
<p>SR 3.5.2.4    -----NOTE-----           One LPCI subsystem may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually realigned and not otherwise inoperable.           -----</p> <p>          Verify each required ECCS injection/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.</p>	<p>31 days</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY														
SR 3.5.2.5	<p>Verify each required ECCS pump develops the specified flow rate against a system head corresponding to the specified reactor pressure above primary containment pressure.</p> <table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td style="text-align: center;">SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE ABOVE PRIMARY CONTAINMENT PRESSURE OF</td> </tr> <tr> <td style="text-align: center;"><u>SYSTEM</u></td> <td style="text-align: center;"><u>FLOW RATE</u></td> </tr> <tr> <td style="text-align: center;">CS</td> <td style="text-align: center;">≥ 4265 gpm</td> </tr> <tr> <td style="text-align: center;">LPCI</td> <td style="text-align: center;">≥ 7700 gpm</td> </tr> <tr> <td style="text-align: center;">NO. OF PUMPS</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">≥ 113 psi</td> </tr> <tr> <td></td> <td style="text-align: center;">≥ 20 psi</td> </tr> </table>		SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE ABOVE PRIMARY CONTAINMENT PRESSURE OF	<u>SYSTEM</u>	<u>FLOW RATE</u>	CS	≥ 4265 gpm	LPCI	≥ 7700 gpm	NO. OF PUMPS	1	1	≥ 113 psi		≥ 20 psi	In accordance with the Inservice Testing Program
	SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE ABOVE PRIMARY CONTAINMENT PRESSURE OF															
<u>SYSTEM</u>	<u>FLOW RATE</u>															
CS	≥ 4265 gpm															
LPCI	≥ 7700 gpm															
NO. OF PUMPS	1															
1	≥ 113 psi															
	≥ 20 psi															
SR 3.5.2.6	<p>-----NOTE----- Vessel injection/spray may be excluded. -----</p> <p>Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.</p>	24 months														

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM

3.5.3 RCIC System

LC0 3.5.3 The RCIC System shall be OPERABLE.

APPLICABILITY: MODE 1,  
MODES 2 and 3 with reactor steam dome pressure > 150 psig.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCIC System inoperable.	A.1 Verify by administrative means High Pressure Coolant Injection System is OPERABLE.	Immediately
	<u>AND</u> A.2 Restore RCIC System to OPERABLE status.	14 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Reduce reactor steam dome pressure to ≤ 150 psig.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.3.1    Verify the RCIC System piping is filled with water from the pump discharge valve to the injection valve.	31 days
SR 3.5.3.2    Verify each RCIC System manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.3.3    -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----- Verify, with reactor pressure $\leq$ 1040 psig and $\geq$ 970 psig, the RCIC pump can develop a flow rate $\geq$ 400 gpm against a system head corresponding to reactor pressure.	92 days
SR 3.5.3.4    -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----- Verify, with reactor pressure $\leq$ 165 psig, the RCIC pump can develop a flow rate $\geq$ 400 gpm against a system head corresponding to reactor pressure.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.3.5 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test.</li> <li>2. Vessel injection may be excluded.</li> </ol> <p>-----</p> <p>Verify the RCIC System actuates on an actual or simulated automatic initiation signal.</p>	<p>24 months</p>

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 suppression chamber pressure increase is $\leq 0.25$ in. water gauge per minute over a 10 minute period with a drywell to suppression chamber differential pressure of $\geq 1$ psi.	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 Locks

LCO 3.6.1.2 Two primary containment air locks shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----NOTES-----

1. Entry and exit is permissible to perform repairs of the affected air lock components.
  2. Separate Condition entry is allowed for each air lock.
  3. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when air lock leakage results in exceeding overall containment leakage rate acceptance criteria.
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CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more primary containment air locks with one primary containment air lock door inoperable.</p>	<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 same 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> <p>A.1 Verify the OPERABLE door is closed in the affected air lock.</p> <p><u>AND</u></p>	<p>1 hour</p> <p>(continued)</p>





ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3.	12 hours
	<u>AND</u> 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 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>	In accordance with the Primary Containment Leakage Rate Testing Program
<p>SR 3.6.1.2.2 Verify only one door in the primary containment air lock can be opened at a time.</p>	24 months

### 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, 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 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.
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CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Only applicable to penetration flow paths with two or more PCIVs. ----- One or more penetration flow paths with one PCIV inoperable for reasons other than Conditions D and E.</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>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Isolation devices in high radiation areas may be verified by use of administrative means.</li> <li>2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.</li> </ol> <p>-----</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 or more PCIVs. ----- One or more penetration flow paths with two or more PCIVs inoperable for reasons other than Conditions D and E.</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. ----- One or more penetration flow paths with one PCIV inoperable for reasons other than Conditions D and E.</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) and penetrations with a closed system</p> <p><u>AND</u></p> <p>72 hours for EFCVs and penetrations with a closed system</p>

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	<p>C.2</p> <p>-----NOTES-----</p> <p>1. Isolation devices in high radiation areas may be verified by use of administrative means.</p> <p>2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.</p> <p>-----</p> <p>Verify the affected penetration flow path is isolated.</p>	Once per 31 days
D. One or more penetration flow paths with one or more MSIVs not within leakage rate limit.	D.1 Restore leakage rate to within limit.	8 hours
E. One or more penetration flow paths with LPCI System or CS System testable check valve leakage limit not met.	E.1 Restore leakage rate to within limit.	72 hours

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.3.1 -----NOTE-----            Not required to be met when the 20 inch and 24 inch primary containment vent and purge 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, provided the full-flow line to Standby Gas Treatment (SGT) System is closed and one or more SGT System reactor building suction valves are open.            -----            Verify each 20 inch and 24 inch primary containment vent and purge valve is closed.</p>	<p>31 days</p>
<p>SR 3.6.1.3.2 -----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.            -----            Verify each primary containment isolation manual valve and blind flange that is located outside primary containment and not locked, sealed or otherwise secured and is required to be closed during accident conditions is closed.</p>	<p>31 days</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.3.3 -----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 not locked, sealed or otherwise secured 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 3.6.1.3.4 Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge.</p>	<p>31 days</p>
<p>SR 3.6.1.3.5 Verify the isolation time of each power operated, automatic PCIV, except for MSIVs, is within limits.</p>	<p>In accordance with the Inservice Testing Program</p>
<p>SR 3.6.1.3.6 Verify the isolation time of each MSIV is <math>\geq 3</math> seconds and <math>\leq 5</math> seconds.</p>	<p>In accordance with the Inservice Testing Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.7	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	24 months
SR 3.6.1.3.8	Verify each reactor instrumentation line EFCV actuates to the isolation position on a simulated instrument line break.	In accordance with the Inservice Testing Program
SR 3.6.1.3.9	Remove and test the explosive squib from each shear isolation valve of the TIP System.	24 months on a STAGGERED TEST BASIS
SR 3.6.1.3.10	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 3.6.1.3.11	Verify the leakage rate of each air operated testable check valve associated with the LPCI and CS Systems vessel injection penetrations is within limits.	In accordance with the Primary Containment Leakage Rate Testing Program

3.6 CONTAINMENT SYSTEMS

3.6.1.4 Drywell Pressure

LCO 3.6.1.4 Drywell pressure shall be  $\leq$  1.95 psig.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Drywell pressure not within limit.	A.1 Restore drywell pressure to within limit.	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 3.6.1.4.1 Verify drywell pressure is within limit.	12 hours

3.6 CONTAINMENT SYSTEMS

3.6.1.5 Drywell Air Temperature

LCO 3.6.1.5 Drywell average air temperature shall be  $\leq 135^{\circ}\text{F}$ .

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 3.6.1.5.1 Verify drywell average air temperature is within limit.	24 hours

3.6 CONTAINMENT SYSTEMS

3.6.1.6 Reactor Building-to-Suppression Chamber Vacuum Breakers

LCO 3.6.1.6 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.  
-----

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.	12 hours
	<u>AND</u> E.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.6.1 -----NOTES----- 1. Not required to be met for vacuum breakers that are open during Surveillances.  2. Not required to be met for vacuum breakers open when performing their intended function. -----  Verify each vacuum breaker is closed.	14 days
SR 3.6.1.6.2 Perform a functional test of each vacuum breaker.	In accordance with the Inservice Testing Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.3	Perform a CHANNEL CALIBRATION of each air operated vacuum breaker differential pressure instrument channel and verify the setpoint is $\leq 0.5$ psid.	92 days
SR 3.6.1.6.4	Verify the opening setpoint of each self actuating vacuum breaker is $\leq 0.5$ psid.	24 months

3.6 CONTAINMENT SYSTEMS

3.6.1.7 Suppression Chamber-to-Drywell Vacuum Breakers

LCO 3.6.1.7 Each suppression chamber-to-drywell vacuum breaker shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One suppression chamber-to-drywell vacuum breaker inoperable for opening.	A.1 Restore the vacuum breaker to OPERABLE status.	72 hours
B. One suppression chamber-to-drywell vacuum breaker not closed.	B.1 Close the open vacuum breaker.	2 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 3.6.1.7.1 -----NOTES----- 1. Not required to be met for vacuum breakers that are open during Surveillances.  2. Not required to be met for vacuum breakers open when performing their intended function. -----  Verify each vacuum breaker is closed.	14 days
SR 3.6.1.7.2 Perform a functional test of each vacuum breaker.	In accordance with the Inservice Testing Program
SR 3.6.1.7.3 Verify the opening setpoint of each vacuum breaker is $\leq 0.5$ psid.	24 months

3.6 CONTAINMENT SYSTEMS

3.6.1.8 Main Steam Leakage Collection (MSLC) System

LCO 3.6.1.8 Two MSLC subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MSLC subsystem inoperable.	A.1 Restore MSLC subsystem to OPERABLE status.	30 days
B. Two MSLC subsystems inoperable.	B.1 Restore one MSLC subsystem 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 3.6.1.8.1    Verify each MSLC 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 3.6.1.8.2    Perform a system functional test of each MSLC subsystem.	24 months

3.6 CONTAINMENT SYSTEMS

3.6.1.9 Residual Heat Removal (RHR) Containment Spray System

LCO 3.6.1.9 Two RHR containment spray subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR containment spray subsystem inoperable.	A.1 Restore RHR containment spray subsystem to OPERABLE status.	7 days
B. Two RHR containment spray subsystems inoperable.	B.1 Restore one RHR containment 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 3.6.1.9.1    Verify each RHR containment 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 3.6.1.9.2    Verify each required RHR pump develops a flow rate of $\geq 7750$ gpm through the associated heat exchanger while operating in the suppression pool cooling mode.	In accordance with the Inservice Testing Program
SR 3.6.1.9.3    Verify each spray nozzle is unobstructed.	10 years



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met.	B.1 Reduce THERMAL POWER to $\leq 1\%$ RTP.	12 hours
C. Suppression pool average temperature $> 105^{\circ}\text{F}$ .  <u>AND</u>  THERMAL POWER $> 1\%$ RTP.  <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 $> 110^{\circ}\text{F}$ but $\leq 120^{\circ}\text{F}$ .	D.1 Place the reactor mode switch in the shutdown position.  <u>AND</u> D.2 Verify suppression pool average temperature $\leq 120^{\circ}\text{F}$ .  <u>AND</u> D.3 Be in MODE 4.	Immediately  Once per 30 minutes  36 hours

(continued)

Suppression Pool Average Temperature  
3.6.2.1

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  $\geq$  13.88 ft and  $\leq$  14 ft.

-----NOTE-----  
 Not required to be met for up to 4 hours during  
 Surveillances that cause suppression pool water level to be  
 outside the limit.  
 -----

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. <u>AND</u> C.2 Be in MODE 4.	12 hours  36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
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.	31 days
SR 3.6.2.3.2    Verify each required RHR pump develops a flow rate $\geq$ 7700 gpm through the associated heat exchanger while operating in the suppression pool cooling mode.	In accordance with the Inservice Testing Program

3.6 CONTAINMENT SYSTEMS

3.6.2.4 Drywell-to-Suppression Chamber Differential Pressure

LCO 3.6.2.4 The drywell pressure shall be maintained  $\geq 1.7$  psi above the pressure of the suppression chamber.

-----NOTE-----  
 Not required to be met for 4 hours during Surveillances that cause or require the drywell-to-suppression chamber differential pressure to be outside the limit.  
 -----

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 the next scheduled reactor shutdown.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Drywell-to-suppression chamber differential pressure not within limit.	A.1 Restore differential pressure to within limit.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to $\leq 15\%$ RTP.	12 hours

Drywell-to-Suppression Chamber Differential Pressure  
3.6.2.4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.2.4.1 Verify drywell-to-suppression chamber differential pressure is within limit.	12 hours

3.6 CONTAINMENT SYSTEMS

3.6.3.1 Primary Containment Oxygen Concentration

LCO 3.6.3.1 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 the next scheduled 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 ≤ 15% RTP.	8 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.3.1.1 Verify primary containment oxygen concentration is within limits.	7 days

3.6 CONTAINMENT SYSTEMS

3.6.3.2 Containment Atmosphere Dilution (CAD) System

LCO 3.6.3.2 Two CAD subsystems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CAD subsystem inoperable.	A.1 -----NOTE----- LCO 3.0.4 is not applicable. -----  Restore CAD subsystem to OPERABLE status.	30 days
B. Two CAD subsystems inoperable.	B.1 Verify by administrative means that the hydrogen control function is maintained.  <u>AND</u> B.2 Restore one CAD subsystem to OPERABLE status.	1 hour <u>AND</u> Once per 12 hours thereafter  7 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.2.1	Verify $\geq$ 1400 gal of liquid nitrogen are contained in each CAD subsystem.	31 days
SR 3.6.3.2.2	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

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.	Immediately
	<u>AND</u>	(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 secondary containment vacuum is $\geq 0.25$ inch of vacuum water gauge.	24 hours
SR 3.6.4.1.2 Verify all secondary containment equipment hatches are closed and sealed.	31 days
SR 3.6.4.1.3 Verify one secondary containment access door in each access opening is closed.	31 days
SR 3.6.4.1.4 Verify the secondary containment can be maintained $\geq 0.25$ inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate $\leq 6000$ cfm.	24 months on a STAGGERED TEST BASIS for each SGT subsystem

3.6 CONTAINMENT SYSTEMS

3.6.4.2 Secondary Containment Isolation Valves (SCIVs)

LCO 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
<p>A. One or more penetration flow paths with one SCIV inoperable.</p>	<p>A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.</p> <p><u>AND</u></p>	<p>8 hours</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. (continued)</p>	<p>A.2</p> <p>-----NOTES-----            1. Isolation devices in high radiation areas may be verified by use of administrative means.             2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.            -----</p> <p>Verify the affected penetration flow path is isolated.</p>	<p>Once per 31 days</p>
<p>B. -----NOTE-----            Only applicable to penetration flow paths with two isolation valves.            -----             One or more penetration flow paths with two SCIVs inoperable.</p>	<p>B.1</p> <p>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>4 hours</p>
<p>C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.</p>	<p>C.1 Be in MODE 3.  <u>AND</u>            C.2 Be in MODE 4.</p>	<p>12 hours             36 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>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.</p>	<p>D.1 -----NOTE-----                      LCO 3.0.3 is not applicable.                      -----</p> <p>Suspend movement of irradiated fuel assemblies in the secondary containment.</p>	<p>Immediately</p>
	<p><u>AND</u></p> <p>D.2 Suspend CORE ALTERATIONS.</p>	<p>Immediately</p>
	<p><u>AND</u></p> <p>D.3 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.4.2.1 -----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 not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed.</p>	<p>31 days</p>
<p>SR 3.6.4.2.2 Verify the isolation time of each power operated, automatic SCIV is within limits.</p>	<p>92 days</p>
<p>SR 3.6.4.2.3 Verify each automatic SCIV actuates to the isolation position on an actual or simulated actuation signal.</p>	<p>24 months</p>



ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	<p>C.2.1 Suspend movement of irradiated fuel assemblies in secondary containment.</p> <p style="text-align: center;"><u>AND</u></p> <p>C.2.2 Suspend CORE ALTERATIONS.</p> <p style="text-align: center;"><u>AND</u></p> <p>C.2.3 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p>
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.	<p>E.1 -----NOTE----- LCO 3.0.3 is not applicable. -----</p> <p>Suspend movement of irradiated fuel assemblies in secondary containment.</p> <p style="text-align: center;"><u>AND</u></p> <p>E.2 Suspend CORE ALTERATIONS.</p> <p style="text-align: center;"><u>AND</u></p> <p>E.3 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for $\geq 10$ continuous hours 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
SR 3.6.4.3.4	Manually cycle each SGT subsystem filter cooling cross-tie valve.	24 months

3.7 PLANT SYSTEMS

3.7.1 Residual Heat Removal Service Water (RHRSW) System

LCO 3.7.1 Two RHRSW subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHRSW pump inoperable.	A.1 Restore RHRSW pump to OPERABLE status.	30 days
B. One RHRSW pump in each subsystem inoperable.	B.1 Restore one RHRSW pump to OPERABLE status.	7 days
C. One RHRSW subsystem inoperable for reasons other than Condition A.	<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 RHRSW System.  -----</p> <p>C.1 Restore RHRSW subsystem to OPERABLE status.</p>	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Both RHR SW subsystems inoperable for reasons other than Condition B.	<p>-----NOTE-----  Enter applicable Conditions and Required Actions of LCO 3.4.7 for RHR shutdown cooling made inoperable by RHR SW System.  -----</p> <p>D.1 Restore one RHR SW subsystem to OPERABLE status.</p>	8 hours
E. Required Action and associated Completion Time not met.	<p>E.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.1.1 Verify each RHR SW 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>	31 days

3.7 PLANT SYSTEMS

3.7.2 Emergency Service Water (ESW) System and Ultimate Heat Sink (UHS)

LCO 3.7.2 Two ESW subsystems and UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One ESW subsystem inoperable.</p>	<p>-----NOTE-----            Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources - Operating," for emergency diesel generator subsystem made inoperable by ESW.            -----</p> <p>A.1 Restore the ESW subsystem to OPERABLE status.</p>	<p>7 days</p>
<p>B. One division of required deicing heaters inoperable.</p> <p><u>AND</u></p> <p>UHS temperature <math>\leq 37^{\circ}\text{F}</math>.</p>	<p>B.1 Restore the division of deicing heaters to OPERABLE status.</p>	<p>7 days</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Required Action and associated Completion Time not met.</p> <p><u>OR</u></p> <p>Both ESW subsystems inoperable for reasons other than Condition A.</p> <p><u>OR</u></p> <p>UHS inoperable for reasons other than Condition B.</p>	<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>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.1 Verify the water level in the ESW pump screenwell is <math>\geq</math> 236.5 ft mean sea level.</p>	<p>24 hours</p>
<p>SR 3.7.2.2 Verify the average water temperature of UHS is <math>\leq</math> 85°F.</p>	<p>24 hours</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.3</p> <p>-----NOTE----- Not required to be met if UHS temperature is &gt; 37°F. -----</p> <p>Verify the required deicing heater feeder current is within limits for each division of deicing heaters.</p>	<p>7 days</p>
<p>SR 3.7.2.4</p> <p>-----NOTE----- Isolation of flow to individual components does not necessarily render ESW System inoperable. -----</p> <p>Verify each ESW subsystem manual, power operated, and automatic 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.</p>	<p>31 days</p>
<p>SR 3.7.2.5</p> <p>-----NOTE----- Not required to be met if UHS temperature is &gt; 37°F. -----</p> <p>Verify the required deicing heater power is within limits for each division of deicing heaters.</p>	<p>6 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.6</p> <p>-----NOTE-----                      Not required to be met if UHS temperature                      is &gt; 37°F.                      -----</p> <p>Verify the required deicing heater                      resistance to ground is within limits for                      each division of deicing heaters.</p>	<p>12 months</p>
<p>SR 3.7.2.7</p> <p>Verify each ESW subsystem actuates on an                      actual or simulated initiation signal.</p>	<p>24 months</p>

3.7 PLANT SYSTEMS

3.7.3 Control Room Emergency Ventilation Air Supply (CREVAS) System

LCO 3.7.3 Two CREVAS subsystems shall be OPERABLE.

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

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 CREVAS subsystem inoperable.	A.1 Restore CREVAS subsystem to OPERABLE status.	7 days
B. Two CREVAS subsystems inoperable due to inoperable control room boundary in MODE 1, 2, or 3.	B.1 Restore control room boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 Be in MODE 3.	12 hours
	<u>AND</u> C.2 Be in MODE 4.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. 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.</p>	<p>-----NOTE----- LCO 3.0.3 is not applicable. -----</p> <p>D.1 Place OPERABLE CREVAS subsystem in isolate mode.</p> <p><u>OR</u></p> <p>D.2.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p> <p><u>AND</u></p> <p>D.2.2 Suspend CORE ALTERATIONS.</p> <p><u>AND</u></p> <p>D.2.3 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p> <p>Immediately</p>
<p>E. Two CREVAS subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.</p>	<p>E.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two CREVAS 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. -----	
	F.1 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	
	F.2 Suspend CORE ALTERATIONS.	Immediately
<u>AND</u>		
F.3 Initiate action to suspend OPDRVs.	Immediately	

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.3.1 Operate each CREVAS subsystem for $\geq$ 15 minutes.	92 days
SR 3.7.3.2 Perform required CREVAS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.7.3.3    Verify each CREVAS subsystem can maintain a positive pressure of $\geq 0.125$ inches water gauge relative to atmosphere and turbine building during the isolate mode of operation at a flow rate of $\geq 900$ scfm and $\leq 1100$ scfm.	18 months on a STAGGERED TEST BASIS

3.7 PLANT SYSTEMS

3.7.4 Control Room Air Conditioning (AC) System

LCO 3.7.4 Two control room AC 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 control room AC subsystem inoperable.	A.1 Restore control room AC subsystem to OPERABLE status.	30 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.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>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.</p>	<p>-----NOTE-----                      LCO 3.0.3 is not applicable.                      -----</p> <p>C.1 Place OPERABLE control room AC subsystem in operation.</p> <p><u>OR</u></p> <p>C.2.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p> <p><u>AND</u></p> <p>C.2.2 Suspend CORE ALTERATIONS.</p> <p><u>AND</u></p> <p>C.2.3 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p> <p>Immediately</p>
<p>D. Two control room AC subsystems inoperable in MODE 1, 2, or 3.</p>	<p>D.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two control room AC 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 Verify each control room AC subsystem has the capability to remove the assumed heat load.	24 months

3.7 PLANT SYSTEMS

3.7.5 Main Condenser Steam Jet Air Ejector (SJAE) Offgas

LCO 3.7.5 The gross gamma activity rate of the noble gases measured at the discharge of the SJAE (prior to dilution and/or discharge) shall be  $\leq 600,000 \mu\text{Ci/second}$ .

APPLICABILITY: MODE 1,  
MODES 2 and 3 with any main steam line not isolated and steam jet air ejector (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 600,000 \mu\text{Ci/second}</math>.</p>	<p>31 days  <u>AND</u>            -----NOTE-----            Only required            when gross            gamma activity            rate is <math>\geq 5,000</math>  <math>\mu\text{Ci/second}</math>            -----            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 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR; and
- b. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," 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 required main turbine bypass valve.	Prior to entering MODE 2 or 3 from MODE 4
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  $\geq$  21 ft 7 inches over the top of irradiated fuel assemblies seated in the spent fuel storage pool racks.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.7.1    Verify the spent fuel storage pool water level is $\geq$ 21 ft 7 inches over the top of irradiated fuel assemblies seated in the spent fuel storage pool racks.	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 plant Class 1E AC Electrical Power Distribution System; and
- b. Two emergency diesel generator (EDG) subsystems.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One offsite circuit inoperable.</p>	<p>A.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit.</p>	<p>1 hour <u>AND</u> Once per 8 hours thereafter</p>
	<p><u>AND</u> A.2 Declare required feature(s) with no offsite power available inoperable when the redundant required feature(s) are inoperable.</p>	<p>24 hours from discovery of no offsite power to one division concurrent with inoperability of redundant required feature(s)</p>
	<p><u>AND</u></p>	<p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	<p>A.3 Restore offsite circuit to OPERABLE status.</p>	<p>7 days <u>AND</u> 21 days from discovery of failure to meet LCO</p>
B. One EDG subsystem inoperable.	<p>B.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).</p> <p><u>AND</u></p> <p>B.2 Declare required feature(s), supported by the inoperable EDG subsystem, inoperable when the redundant required feature(s) are inoperable.</p> <p><u>AND</u></p> <p>B.3.1 Determine OPERABLE EDG subsystem is not inoperable due to common cause failure.</p> <p><u>OR</u></p> <p>B.3.2 Perform SR 3.8.1.2 for OPERABLE EDG subsystem.</p> <p><u>AND</u></p>	<p>1 hour <u>AND</u> Once per 8 hours thereafter</p> <p>4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)</p> <p>24 hours</p> <p>24 hours</p> <p>(continued)</p>



ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. (continued)	D.2 Restore EDG subsystem to OPERABLE status.	12 hours
E. Two EDG subsystems inoperable.	E.1 Restore one EDG subsystem to OPERABLE status.	2 hours
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3.	12 hours
	<u>AND</u> F.2 Be in MODE 4.	36 hours
G. Three or more AC sources inoperable.	G.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

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 -----NOTE-----            All EDG subsystem starts may be preceded by an engine prelube period and followed by a warmup period prior to loading.            -----            Verify each EDG subsystem starts from standby conditions, force parallels, and achieves:</p> <ol style="list-style-type: none"> <li>a. In <math>\leq 10</math> seconds, voltage <math>\geq 3900</math> V and frequency <math>\geq 58.8</math> Hz; and</li> <li>b. Steady state voltage <math>\geq 3900</math> V and <math>\leq 4400</math> V and frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</li> </ol>	<p>31 days</p>
<p>SR 3.8.1.3 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. EDG 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 EDG subsystem 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.</li> </ol> <p>-----            Verify each EDG subsystem is paralleled with normal, reserve, or backfeed power and each EDG is loaded and operates for <math>\geq 60</math> minutes at a load <math>\geq 2340</math> kW and <math>\leq 2600</math> kW.</p>	<p>31 days</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.4     Verify each day tank contains $\geq$ 327 gal of fuel oil.	31 days
SR 3.8.1.5     Check for and remove accumulated water from each day tank.	31 days
SR 3.8.1.6     Verify that each EDG fuel oil transfer system operates to automatically transfer fuel oil from its storage tank to the associated day tank.	31 days
SR 3.8.1.7     -----NOTE----- Only required to be met for each offsite circuit that is not energizing its respective 4.16 kV emergency bus. ----- Verify automatic and manual transfer of plant power supply from the normal station service transformer to each offsite circuit.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.8 -----NOTE-----            If performed with the EDG subsystem paralleled with normal, reserve, or backfeed power, it shall be performed within the power factor limit. However, 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.            -----            Verify each EDG subsystem rejects a load greater than or equal to its associated single largest post-accident load, and following load rejection, the frequency is <math>\leq 66.75</math> Hz.</p>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.9 -----NOTE-----            All EDG subsystem starts may be preceded by an engine prelube period.            -----</p> <p>Verify on an actual or simulated loss of power signal:</p> <ul style="list-style-type: none"> <li>a. De-energization of emergency buses;</li> <li>b. Load shedding from emergency buses; and</li> <li>c. EDG subsystem auto-starts from standby condition, force parallels, and:               <ul style="list-style-type: none"> <li>1. energizes permanently connected loads in <math>\leq 11</math> seconds,</li> <li>2. energizes auto-connected shutdown loads,</li> <li>3. maintains steady state voltage <math>\geq 3900</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 permanently connected and auto-connected shutdown loads for <math>\geq 5</math> minutes.</li> </ul> </li> </ul>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.10 -----NOTE-----            All EDG subsystem 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 EDG subsystem auto-starts from standby condition, force parallels, and:</p> <ul style="list-style-type: none"> <li>a. In <math>\leq 10</math> seconds after auto-start and during tests, achieves voltage <math>\geq 3900</math> V, frequency <math>\geq 58.8</math> Hz;</li> <li>b. Achieves steady state voltage <math>\geq 3900</math> V and <math>\leq 4400</math> V and 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 auto-connected in the prescribed sequence from the offsite power system.</li> </ul>	<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. 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> </ol> <p>-----</p> <p>Verify each EDG subsystem operating within the power factor limit operates for <math>\geq 8</math> hours:</p> <ol style="list-style-type: none"> <li>a. For <math>\geq 2</math> hours each EDG loaded <math>\geq 2730</math> kW and <math>\leq 2860</math> kW; and</li> <li>b. For the remaining hours of the test each EDG loaded <math>\geq 2340</math> kW and <math>\leq 2600</math> kW.</li> </ol>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.12 -----NOTE-----            All EDG subsystem starts may be preceded by an engine prelube period.            -----</p> <p>Verify, on an actual or simulated loss of power signal in conjunction with an actual or simulated ECCS initiation signal:</p> <ul style="list-style-type: none"> <li>a. De-energization of emergency buses;</li> <li>b. Load shedding from emergency buses; and</li> <li>c. EDG subsystem auto-starts from standby condition, force parallels, and:               <ul style="list-style-type: none"> <li>1. energizes permanently connected loads in <math>\leq 11</math> seconds,</li> <li>2. energizes auto-connected emergency loads in the prescribed sequence,</li> <li>3. achieves steady state voltage <math>\geq 3900</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 permanently connected and auto-connected emergency loads for <math>\geq 5</math> minutes.</li> </ul> </li> </ul>	<p>24 months</p>
<p>SR 3.8.1.13 Verify interval between each sequenced load block is greater than or equal to the minimum design load interval.</p>	<p>24 months</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 one division of the plant Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems – Shutdown";
- b. One qualified circuit, which maybe the same circuit required by LCO 3.8.2.a, between the offsite transmission network and the other division of the plant Class 1E AC electrical power distribution subsystem(s), when a second division is required by LCO 3.8.8; and
- c. One emergency diesel generator (EDG) subsystem capable of supplying one division of the plant Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8.

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

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 EDG subsystem inoperable.	B.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	B.2 Suspend movement of irradiated fuel assemblies in secondary containment.	Immediately
	<u>AND</u>	
	B.3 Initiate action to suspend OPDRVs.	Immediately
	<u>AND</u>	
	B.4 Initiate action to restore required EDG subsystem to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.2.1 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.8, SR 3.8.1.9, SR 3.8.1.11, SR 3.8.1.12, and SR 3.8.1.13.</li> <li>2. SR 3.8.1.10 and SR 3.8.1.12 are not required to be met when associated ECCS subsystem(s) are not required to be OPERABLE per LCO 3.5.2, "ECCS – Shutdown."</li> </ol> <p>-----</p> <p>For AC sources required to be OPERABLE the SRs of Specification 3.8.1, except SR 3.8.1.7, 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 emergency diesel generator (EDG).

APPLICABILITY: When associated EDG subsystem is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more EDGs with fuel oil level < 32,000 gal and > 28,000 gal in storage tank.	A.1 Restore fuel oil level to within limits.	48 hours
B. One or more EDGs with lube oil inventory < 168 gal and > 144 gal.	B.1 Restore lube oil inventory to within limits.	48 hours
C. One or more EDGs with stored fuel oil total particulates not within limit.	C.1 Restore stored fuel oil total particulates to within limit.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more EDGs with new fuel oil properties not within limits.	D.1 Restore stored fuel oil properties to within limits.	30 days
E. One or more EDGs with required starting air receiver pressure < 150 psig and ≥ 110 psig.	E.1 Restore required starting air receiver pressure to within limits.	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 EDGs 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 EDG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.3.1 Verify each fuel oil storage tank contains ≥ 32,000 gal of fuel.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.3.2     Verify lube oil inventory of each EDG is $\geq$ 168 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 EDG required air start receiver pressure is $\geq$ 150 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

LC0 3.8.4 The following DC electrical power subsystems shall be OPERABLE:

- a. Two 125 VDC subsystems; and
- b. Two 419 VDC low pressure coolant injection (LPCI) MOV independent power supply subsystems.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One 125 VDC electrical power subsystem inoperable.	A.1 Restore 125 VDC electrical power subsystem to OPERABLE status.	8 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. One or both 419 VDC LPCI MOV independent power supply subsystems inoperable.	C.1 Declare associated LPCI subsystem(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.1     Verify battery terminal voltage on float charge is:</p> <p>    a.    <math>\geq 127.8</math> VDC for 125 VDC batteries, and</p> <p>    b.    <math>\geq 396.2</math> VDC for 419 VDC LPCI MOV independent power supply batteries.</p>	<p>7 days</p>
<p>SR 3.8.4.2     Verify each 125 VDC battery charger supplies <math>\geq 270</math> amps at <math>\geq 128</math> VDC for <math>\geq 4</math> hours.</p>	<p>24 months</p>
<p>SR 3.8.4.3     -----NOTE-----</p> <p>                  This Surveillance shall not normally be performed in MODE 1, 2, or 3 for the 125 VDC batteries. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.</p> <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 or a modified performance discharge test.</p>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.4 -----NOTE-----            This Surveillance shall not normally be performed in MODE 1, 2, or 3 for the 125 VDC batteries. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. 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>

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources – Shutdown

LCO 3.8.5 One 125 VDC electrical power subsystem shall be OPERABLE to support one division of the plant Class IE DC Electrical Power Distribution System 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. Required DC electrical power subsystem inoperable.	A.1 Declare affected required feature(s) 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>	
		(continued)



3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Cell Parameters

LCO 3.8.6 Battery cell parameters for the 125 VDC and 419 VDC LPCI MOV independent power supply batteries shall be within the limits of Table 3.8.6-1.

AND

Battery cell average electrolyte temperature for the 125 VDC and 419 VDC LPCI MOV independent power supply batteries shall be within required limits.

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
	<u>AND</u>	(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3 Restore battery cell parameters to Category A and B limits of Table 3.8.6-1.	31 days
<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>	B.1 Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.6.1 Verify battery cell parameters meet Table 3.8.6-1 Category A limits.	7 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.6.2 Verify battery cell parameters meet Table 3.8.6-1 Category B limits.	92 days
SR 3.8.6.3 Verify average electrolyte temperature of representative cells is $\geq 65^{\circ}\text{F}$ for each 125 VDC battery, and $\geq 50^{\circ}\text{F}$ for each 419 VDC LPCI MOV independent power supply battery.	92 days

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: LIMITS FOR EACH CONNECTED CELL
Electrolyte Level	> Minimum level indication mark, and $\leq \frac{1}{4}$ inch above maximum level indication mark <sup>(a)</sup>	> Minimum level indication mark, and $\leq \frac{1}{4}$ inch above maximum level indication mark <sup>(a)</sup>	Above top of plates, and not overflowing
Float Voltage	$\geq 2.13$ V	$\geq 2.13$ V	$> 2.07$ V
Specific Gravity <sup>(b)(c)</sup>	$\geq 1.195$	$\geq 1.195$ <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 $\geq 1.195$

- (a) It is acceptable for the electrolyte level to temporarily increase above the specified maximum level during and, for a limited time, following 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  $< 2$  amps for 125 VDC batteries and  $< 1$  amp for 419 VDC LPCI MOV independent power supply batteries.
- (c) A battery charging current of  $< 2$  amps for 125 VDC batteries and  $< 1$  amp for 419 VDC LPCI MOV independent power supply batteries when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When charging current is used to satisfy specific gravity requirements, specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance.

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Distribution Systems – Operating

LCO 3.8.7        The Division 1 and Division 2 AC and 125 VDC electrical power distribution subsystems shall be OPERABLE.

APPLICABILITY:    MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more AC electrical power distribution subsystems inoperable.	A.1 Restore AC electrical power distribution subsystems to OPERABLE status.	8 hours <u>AND</u> 16 hours from discovery of failure to meet LCO
B. One 125 VDC electrical power distribution subsystem inoperable.	B.1 Restore 125 VDC electrical power distribution subsystem to OPERABLE status.	8 hours <u>AND</u> 16 hours from discovery of failure to meet LCO
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4.	12 hours  36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two or more electrical power distribution subsystems inoperable that result in a loss of function.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.7.1 Verify correct breaker alignments and voltage to required AC and 125 VDC 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 AC and 125 VDC electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

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 125 VDC 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>	
	A.2.2 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	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 125 VDC electrical power distribution subsystems to OPERABLE status.	Immediately
	<u>AND</u>	
	A.2.5 Declare associated required shutdown cooling subsystem(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.8.1 Verify correct breaker alignments and voltage to required AC and 125 VDC electrical power distribution subsystems.	7 days

3.9 REFUELING OPERATIONS

3.9.1 Refueling Equipment Interlocks

LC0 3.9.1      The refueling equipment interlocks associated with the reactor mode switch in the refuel position shall be OPERABLE.

APPLICABILITY:    During in-vessel fuel movement with equipment associated with the interlocks when the reactor mode switch is in the refuel position.

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
	<u>OR</u>	
	A.2.1    Insert a control rod withdrawal block.	Immediately
	<u>AND</u>	
	A.2.2    Verify all control rods are fully inserted.	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 fuel grapple not fully up,</li> <li>e. Refuel platform frame mounted hoist, fuel loaded, and</li> <li>f. Refuel platform trolley mounted (monorail) hoist, fuel loaded.</li> </ul>	<p>7 days</p>



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 channel for each control rod shall be OPERABLE.

APPLICABILITY: MODE 5.

ACTIONS

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

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



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 -----NOTE----- Not required to be performed until 7 days after the control rod is withdrawn. ----- Insert each withdrawn control rod at least one notch.	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  $\geq$  22 ft 2 inches above the top of the RPV flange.

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 $\geq$ 22 ft 2 inches above the top of the RPV flange.	24 hours

3.9 REFUELING OPERATIONS

3.9.7 Residual Heat Removal (RHR) - High Water Level

LC0 3.9.7 One RHR shutdown cooling subsystem shall be OPERABLE.

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level  $\geq$  22 ft 2 inches above the top of the RPV flange.

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 to OPERABLE status.	Immediately
	<p><u>AND</u></p> B.4 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.7.1 Verify each required RHR shutdown 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.	31 days

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.

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level < 22 ft 2 inches above the top of the RPV flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or two required RHR shutdown cooling subsystems inoperable.</p>	<p>A.1 Verify an alternate method of decay heat removal is available for each inoperable required RHR shutdown cooling subsystem.</p>	<p>1 hour <u>AND</u> Once per 24 hours thereafter</p>
<p>B. Required Action and associated Completion Time of Condition A not met.</p>	<p>B.1 Initiate action to restore secondary containment to OPERABLE status. <u>AND</u> B.2 Initiate action to restore one standby gas treatment subsystem to OPERABLE status. <u>AND</u></p>	<p>Immediately  Immediately   (continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.3 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.8.1 Verify each RHR shutdown 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.	31 days

### 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.	A.1 -----NOTE----- Required Actions to be in MODE 4 include reducing average reactor coolant temperature to $\leq 212^{\circ}\text{F}$ . ----- Enter the applicable Condition of the affected LCO.	Immediately
	<u>OR</u> A.2.1 Suspend activities that could increase the average reactor coolant temperature or pressure.	Immediately
	<u>AND</u> A.2.2 Reduce average reactor coolant temperature to $\leq 212^{\circ}\text{F}$ .	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 style="text-align: center;"><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.a, 7.b, 10, and 11 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 withdrawn to be assumed to be 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
<p>A. One or more of the above requirements not met.</p>	<p>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.</p>	<p>Immediately</p>
	<p><u>OR</u> A.2.1 Initiate action to fully insert all insertable control rods.</p>	<p>Immediately</p>
	<p><u>AND</u> A.2.2 Place the reactor mode switch in the shutdown position.</p>	<p>1 hour</p>

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.a, 7.b, 10, and 11 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 withdrawn to be assumed to be 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
<p>A. One or more of the above requirements not met with the affected control rod insertable.</p>	<p>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. -----</p>	
	<p>Enter the applicable Condition of the affected LCO.</p>	<p>Immediately</p>
	<p><u>OR</u></p>	
	<p>A.2.1 Initiate action to fully insert all insertable control rods.</p>	<p>Immediately</p>
	<p><u>AND</u></p>	
<p>A.2.2 Place the reactor mode switch in the shutdown position.</p>	<p>1 hour</p>	

(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



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 other 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 and removal 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)



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 testing, control rod scram time testing, and control rod friction testing, 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 and 2.d 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. ----- One or more control rods not coupled to its associated CRD.</p>	<p>-----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>A.1 Fully insert inoperable control rod.</p> <p><u>AND</u></p> <p>A.2 Disarm the associated CRD.</p>	<p>3 hours</p> <p>4 hours</p>
<p>B. One or more of the above requirements not met for reasons other than Condition A.</p>	<p>B.1 Place the reactor mode switch in the shutdown or refuel position.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.10.8.1 Perform the MODE 2 applicable SRs for LCO 3.3.1.1, Functions 2.a and 2.d of Table 3.3.1.1-1.</p>	<p>According to the applicable SRs</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>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.</p>	<p>According to the applicable SRs</p>
<p>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.</p>	<p>During control rod movement</p>
<p>SR 3.10.8.4 Verify no other CORE ALTERATIONS are in progress.</p>	<p>12 hours</p>

(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 Location

#### 4.1.1 Site and Exclusion Area Boundaries

The Site and Exclusion Area Boundaries coincide with each other and shall be as shown on Figure 4.1-1.

#### 4.1.2 Low Population Zone (LPZ)

The LPZ shall be a 4 mile radius around the Nine Mile Point Nuclear Station Unit 1 stack.

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### 4.2 Reactor Core

#### 4.2.1 Fuel Assemblies

The reactor shall contain 560 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, and water rods. 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 137 cruciform shaped control rod assemblies. The control material shall be boron carbide or 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 1.32 in the normal reactor core configuration at cold conditions (20°C);
- b.  $k_{\text{eff}} \leq 0.95$  if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.3 of the UFSAR; and
- c. A nominal 6.625 inch center to center distance between fuel assemblies placed in the aluminum high density storage racks, and a nominal 6.355 inch center to center distance between fuel assemblies placed in the stainless steel high density storage racks.

4.3.1.2 The new fuel storage racks are designed and shall be maintained with:

- a. Fuel assemblies having a maximum k-infinity of 1.31 in the normal reactor core configuration at cold conditions (20°C);
- b.  $k_{\text{eff}} \leq 0.90$  if dry;
- c.  $k_{\text{eff}} \leq 0.95$  if fully flooded with unborated water; and
- d. A nominal 6.625 inch center to center distance between fuel assemblies placed in 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 elevation 344 ft 6 inches.

(continued)

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#### 4.0 DESIGN FEATURES

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#### 4.3 Fuel Storage (continued)

##### 4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 3239 fuel assemblies.

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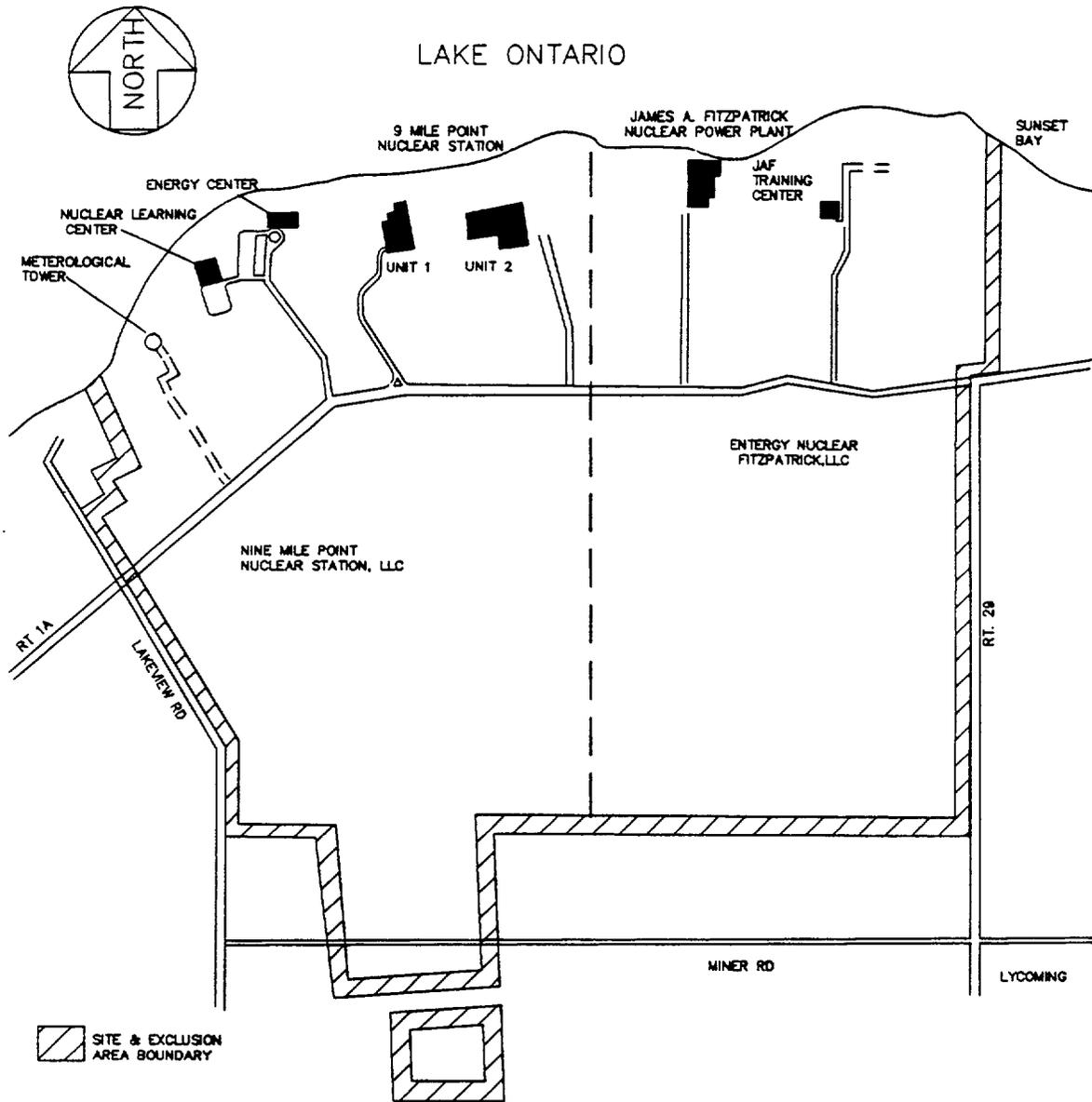


Figure 4.1-1 (page 1 of 1)  
Site and Exclusion Area Boundaries

## 5.0 ADMINISTRATIVE CONTROLS

### 5.1 Responsibility

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- 5.1.1 The plant manager shall be responsible for overall plant 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, and modification to systems or equipment that affect nuclear safety.

- 5.1.2 The shift supervisor (SS) shall be responsible for the control room command function. During any absence of the SS from the control room while the plant 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 SS from the control room while the plant 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.
-

## 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 plant 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, including the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications, 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 chief nuclear officer 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 radiation protection, 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 Plant Staff

The plant staff organization shall include the following:

- a. At least one non-licensed operator shall be on site when the plant is in MODE 4 or 5. At least two non-licensed operators shall be on site when the plant is in MODE 1, 2, or 3.

(continued)

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## 5.2 Organization

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### 5.2.2 Plant Staff (continued)

- b. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 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. A radiation protection technician 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), radiation protection technicians, auxiliary operators, and key maintenance personnel).

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 working hour 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 operations manager or assistant operations manager shall hold an SRO license.
  - f. When the plant is in MODE 1, 2, or 3, an individual shall provide advisory technical support to the shift supervisor (SS) in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the plant. This individual shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift, published in the October 28, 1985 Federal Register (50 FR 43621).
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5.0 ADMINISTRATIVE CONTROLS

5.3 Plant Staff Qualifications

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- 5.3.1 Each member of the plant staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions except for the radiation protection manager, who shall meet or exceed the qualifications of Regulatory Guide 1.8, Revision 1, September 1975.
- 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).
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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 program for radioactive effluent and radiological environmental monitoring;
  - d. Fire Protection Program implementation; and
  - e. All programs specified in Specification 5.5.
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## 5.0 ADMINISTRATIVE CONTROLS

### 5.5 Programs and Manuals

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The following programs and manuals 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:
    - (a) sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and
    - (b) a determination that the change(s) maintain the levels of radioactive effluent control required pursuant to 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 the approval of the plant manager; and
  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

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## 5.5 Programs and Manuals

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

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 the Core Spray, High Pressure Coolant Injection, Residual Heat Removal, Reactor Core Isolation Cooling, Reactor Water Cleanup, process sampling, and Standby Gas Treatment. The program shall include the following:

- a. Preventive maintenance and periodic visual inspection requirements; and
- b. Integrated leak test requirements for each system at 24 month intervals or less.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the 24 month Frequency for performing integrated leak test activities.

### 5.5.3 Post Accident Sampling

This program provides controls that ensure the capability to obtain and analyze reactor coolant, radioactive iodines, and particulates in plant gaseous effluents, and containment atmosphere samples 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 from the site 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 the site to unrestricted areas, conforming to 10 CFR 50, Appendix I;
- e. Determination of cumulative dose contributions from 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. Determination of projected dose contributions from radioactive effluents in accordance with the methodology in the ODCM at least every 31 days.
- f. Limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a period of 31 days would exceed 2% of the guidelines for the annual dose or dose commitment, conforming to 10 CFR 50, Appendix I;

(continued)

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## 5.5 Programs and Manuals

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### 5.5.4 Radioactive Effluent Controls Program (continued)

- g. 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: a dose rate  $\leq 500$  mrem/yr to the whole body and a dose rate  $\leq 3000$  mrem/yr to the skin, and
  - 2. For iodine-131, iodine-133, tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: a dose rate  $\leq 1500$  mrem/yr to any organ;
- h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from the site to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I;
- i. 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 the site to areas at or beyond the site boundary, conforming to 10 CFR 50, Appendix I;
- j. 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; and
- k. Limitations on venting and purging of the primary containment through the Standby Gas Treatment System to maintain releases as low as reasonably achievable.

The provisions of SR 3.0.2 and SR 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 Section 4.2, 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 Primary Containment Leakage Rate Testing Program

This program implements 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 exception:

Type C testing of valves not isolable from the containment free air space may be accomplished by pressurization in the reverse direction, provided that testing in this manner provides equivalent or more conservative results than testing in the accident direction. If potential atmospheric leakage paths (e.g., valve stem packing) are not subjected to test pressure, the portions of the valve not exposed to test pressure shall be subjected to leakage rate measurement during regularly scheduled Type A testing. A list of these valves, the leakage rate measurement method, and the acceptance criteria, shall be contained in the Program.

- a. The peak primary containment internal pressure for the design basis loss of coolant accident,  $P_a$ , is 45 psig.
- b. The maximum allowable primary containment leakage rate,  $L_a$ , at  $P_a$ , shall be 1.5% of containment air weight per day.
- c. The leakage rate acceptance criteria are:
  1. Primary containment leakage rate acceptance criteria is  $\leq 1.0 L_a$ . During plant 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 the Type A tests.
  2. Air lock testing acceptance criteria are:
    - (a) Overall air lock leakage rate is  $\leq 0.05 L_a$  when tested at  $\geq P_a$ ; and
    - (b) For each door seal, leakage rate is  $\leq 120$  scfd when tested at  $\geq P_a$ .

(continued)

5.5 Programs and Manuals

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5.5.6 Primary Containment Leakage Rate Testing Program (continued)

- d. The provisions of SR 3.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.
- e. Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J.

5.5.7 Inservice Testing Program

This program provides controls for inservice testing of certain ASME Code Class 1, 2, and 3 pumps and valves. 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 731 days

- b. The provisions of SR 3.0.2 are applicable to the above required Frequencies for performing inservice testing activities;
- c. The provisions of SR 3.0.3 are applicable to inservice testing activities; and

(continued)

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## 5.5 Programs and Manuals

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### 5.5.7 Inservice Testing Program (continued)

- d. Nothing in the ASME Boiler and Pressure Vessel code shall be construed to supersede the requirements of any TS.

### 5.5.8 Ventilation Filter Testing Program (VFTP)

This program implements the following required testing of Engineered Safeguards filter ventilation systems.

The tests described in Specifications 5.5.8.a and 5.5.8.b shall be performed:

Once per 24 months;

After each complete or partial replacement of the HEPA filter train or charcoal adsorber filter or after removal of a charcoal sample;

After any structural maintenance on the HEPA filter or charcoal adsorber housing that could affect the filter system efficiency; and

Following painting, fire, or chemical release that could adversely affect the ability of the filter system to perform the intended function in any ventilation zone communicating with the system.

The tests described in Specification 5.5.8.c shall be performed:

Once per 24 months;

After 720 hours of system operation;

After any structural maintenance on the charcoal adsorber housing that could affect the filter system efficiency; and

Following painting, fire, or chemical release that could adversely affect the ability of the charcoal filter system to perform the intended function in any ventilation zone communicating with the system.

The tests described in Specifications 5.5.8.d and 5.5.8.e shall be performed once per 24 months.

(continued)

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5.5 Programs and Manuals

5.5.8 Ventilation Filter Testing Program (VFTP) (continued)

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 Engineered Safeguards systems that an in-place test of the HEPA filters shows a penetration and system bypass less than the value specified below when tested in accordance with Sections C.5.a and C.5.c of Regulatory Guide 1.52, Revision 2, and ASME N510-1980 at the system flowrate specified below.

<u>Engineered Safeguards Ventilation System</u>	<u>Penetration and System Bypass</u>	<u>Flowrate (scfm)</u>
Standby Gas Treatment System	1.0%	5,400 to 6,600
Control Room Emergency Ventilation Air Supply System	1.0%	900 to 1,100

- b. Demonstrate for each of the Engineered Safeguards systems that an in-place test of the charcoal adsorber shows a penetration and system bypass less than the value specified below when tested in accordance with Sections C.5.a and C.5.d of Regulatory Guide 1.52, Revision 2, and ASME N510-1980 at the system flowrate specified below.

<u>Engineered Safeguards Ventilation System</u>	<u>Penetration and System Bypass</u>	<u>Flowrate (scfm)</u>
Standby Gas Treatment System	1.0%	5,400 to 6,600
Control Room Emergency Ventilation Air Supply System	0.5%	900 to 1,100

(continued)

5.5 Programs and Manuals

5.5.8 Ventilation Filter Testing Program (VFTP) (continued)

- c. Demonstrate for each of the Engineered Safeguards systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Section C.6.b of Regulatory Guide 1.52, Revision 2, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of  $\leq 30^{\circ}\text{C}$  ( $86^{\circ}\text{F}$ ) and the relative humidity specified below.

<u>Engineered Safeguards Ventilation System</u>	<u>Penetration</u>	<u>RH</u>
Standby Gas Treatment System	5%	$\geq 70\%$
Control Room Emergency Ventilation Air Supply System	5%	$\geq 95\%$

- d. Demonstrate for each of the Engineered Safeguards systems that the pressure drop across the combined HEPA filters and the charcoal adsorbers is less than the value specified below when tested at the system flowrate specified below:

<u>Engineered Safeguards Ventilation System</u>	<u>Delta P (inches wg)</u>	<u>Flowrate (scfm)</u>
Standby Gas Treatment System	5.7	5,400 to 6,600
Control Room Emergency Ventilation Air Supply System	5.8	900 to 1,100

- e. Demonstrate that the heaters for the Standby Gas Treatment System dissipate  $> 29$  kW when tested in accordance with ASME N510-1975.

(continued)

5.5 Programs and Manuals (continued)

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5.5.9 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Main Condenser Offgas Treatment System and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.

The program shall include:

- a. The limits for concentrations of hydrogen and oxygen in the Main Condenser Offgas Treatment System and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion); and
- b. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste System is less than the amount that would result in a concentration that is 10 times the concentration values in Appendix B, Table 2, Column 2, to 10 CFR 20.1001-20.2402 (excluding tritium and dissolved or entrained noble gases) at the nearest potable water supply and the nearest surface water supply beyond the site boundary, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program Surveillance Frequencies.

5.5.10 Diesel Fuel Oil Testing Program

This program implements required testing of both new fuel oil and stored fuel oil. 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)

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5.5 Programs and Manuals

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5.5.10 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. A flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
  - 3. A clear and bright appearance with proper color;
- b. Within 31 days following addition of the new fuel oil to storage tanks verify that the properties of the new fuel oil, other than those addressed in Specification 5.5.10.a above, are within limits for ASTM 2D fuel oil; and
- c. Total particulate concentration of the fuel oil is  $\leq 10$  mg/l when tested every 31 days in accordance with the applicable ASTM Standard, except that the specified filters may be replaced with filters up to 3.0 microns.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program test Frequencies.

5.5.11 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 require either of the following:
  - 1. A change in the TS incorporated in the license; or
  - 2. A change to the UFSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

(continued)

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5.5 Programs and Manuals

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5.5.11 Technical Specifications (TS) Bases Control Program (continued)

- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the UFSAR.
- d. Proposed changes that meet the criteria of Specification 5.5.11.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).

5.5.12 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, no concurrent loss of offsite power or no concurrent loss of emergency diesel generator

(continued)

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## 5.5 Programs and Manuals

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

subsystems, 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:

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 (1) and (2) above is also inoperable.

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. When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.

### 5.5.13 Configuration Risk Management Program (CRMP)

The CRMP provides a proceduralized risk-informed assessment to manage the risk associated with equipment inoperability. The program applies to technical specification structures, systems, or components for which a risk-informed allowed outage time has been granted. The program is to include the following:

- a. Provisions for the control and implementation of a Level 1 at-power internal events PRA-informed methodology. The assessment is to be capable of evaluating the applicable plant configuration.
- b. Provisions for performing an assessment prior to entering the plant configuration described by the Limiting Condition for Operation (LCO) Condition(s) for preplanned activities.
- c. Provisions for performing an assessment after entering the plant configuration described by the LCO Condition(s) for unplanned entry into the LCO Condition(s).

(continued)

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5.5 Programs and Manuals

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5.5.13 Configuration Risk Management Program (CRMP) (continued)

- d. Provisions for assessing the need for additional actions after the discovery of additional equipment-out-of-service conditions while in the plant configuration described by the LCO Condition(s).
  - e. Provisions for considering other applicable risk-significant contributors such as Level 2 issues and external events, qualitatively or quantitatively.
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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

A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors), for whom monitoring was performed, 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 ionization chamber, thermoluminescent dosimeter (TLD), electronic dosimeter, 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, covering the previous calendar year shall be submitted by April 30 of each year.

#### 5.6.2 Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the plant during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program 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.

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 at 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

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## 5.6 Reporting Requirements

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

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

The Radioactive Effluent Release Report covering the operation of the plant 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 plant. 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 Part 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.

### 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 (APLHGR) of Specification 3.2.1;
  2. The MINIMUM CRITICAL POWER RATIO (MCPR) of Specification 3.2.2;
  3. The LINEAR HEAT GENERATION RATE (LHGR) of Specification 3.2.3;

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5.6 Reporting Requirements

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5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

4. The Reactor Protection System (RPS) APRM Neutron Flux-High (Flow Biased) Function Allowable Value of Table 3.3.1.1-1;
  5. The Rod Block Monitor-Upscale Function Allowable Value of Table 3.3.2.1-1; and
  6. The Power/Flow Exclusion Region of Specification 3.4.1.
- 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 document:
1. NEDE-24011-P-A, General Electric Standard Application for Reactor Fuel;
  2. NEDC-31317P, James A. FitzPatrick Nuclear Power Plant SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis; and
  3. NEDO-31960-A, BWR Owners' Group Long-Term Stability Solutions Licensing Methodology.

The COLR will contain the complete identification for each of the Technical Specification referenced topical reports used to prepare the COLR (i.e., report number, title, revision, date, and any supplements).

- 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.

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5.6 Reporting Requirements (continued)

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5.6.6 PAM 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 Area

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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 source or from any surface penetrated by the radiation:

- a. Each entrance or access point to such an area shall be barricaded (e.g., roped off) and conspicuously posted as a high radiation area, or be continuously guarded to prevent unauthorized personnel entry. 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 performing their assigned duties provided 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; 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, with a pre-set 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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5.7 High Radiation Area

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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 source or from any surface penetrated by the radiation: (continued)

4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,
  - (a) 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
  - (b) 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 will 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 entrance or access point to such an area shall be conspicuously posted as a high radiation area and shall be

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5.7 High Radiation Area

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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)

provided with a locked door or gate that prevents unauthorized entry, or be continuously guarded to prevent unauthorized personnel entry, and, in addition:

1. All such door and gate keys shall be maintained under the administrative control of the shift manager, radiation protection manager, or designee.
  2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.
- 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 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 integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached, with a pre-set 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

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## 5.7 High Radiation Area

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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)

3. A self reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,
    - (a) 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
    - (b) 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, or.
  4. In those cases where options 2 and 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 may be used.
  - 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 will 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 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 reasonable be constructed around the individual area need not be controlled by a locked door or gate, nor conspicuously 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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