

### 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 RHRSW subsystems inoperable for reasons other than Condition B.	<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>D.1 Restore one RHRSW 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
SR 3.7.1.1 Verify each RHRSW 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

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#### 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
A. One ESW subsystem inoperable.	<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>	7 days
<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>-----NOTES----- Enter applicable Conditions and Required Actions of LCO 3.8.1 for emergency diesel generator subsystem made inoperable by deicing heaters. -----</p> <p>B.1 Restore the division of deicing heaters to OPERABLE status.</p>	7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.  <u>OR</u>  Both ESW subsystems inoperable for reasons other than Condition A.  <u>OR</u>  UHS inoperable for reasons other than Condition B.	C.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	C.2 Be in MODE 4.	36 hours

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	Verify the water level in the ESW pump screenwell is $\geq$ 236.5 ft mean sea level.	24 hours
SR 3.7.2.2	Verify the average water temperature of UHS is $\leq$ 85°F.	24 hours
SR 3.7.2.3	<p>-----NOTE-----            Not required to be met if UHS temperature is <math>&gt;</math> 37°F.            -----</p> <p>Verify the required deicing heater feeder current is within limits for each division of deicing heaters.</p>	7 days
SR 3.7.2.4	<p>-----NOTE-----            Isolation of flow to individual components does not 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>	31 days

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.2.5	<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>	6 months
SR 3.7.2.6	<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>	12 months
SR 3.7.2.7	Verify each ESW subsystem actuates on an actual or simulated initiation signal.	24 months

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#### 3.7.3 Control Room Emergency Ventilation Air Supply (CREVAS) System

LC0 3.7.3 Two CREVAS subsystems shall be OPERABLE.

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

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ACTIONS

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>	Immediately
	<p><u>OR</u></p> <p>D.2.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p>	Immediately
	<p><u>AND</u></p> <p>D.2.2 Suspend CORE ALTERATIONS.</p>	Immediately
	<p><u>AND</u></p> <p>D.2.3 Initiate action to suspend OPDRVs.</p>	Immediately
E. Two CREVAS subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.	E.1 Enter LCO 3.0.3.	Immediately

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ACTIONS

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

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**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
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 $\leq 1100$ cfm.	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

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ACTIONS (continued)

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

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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), or at the recombiner discharge (prior to delay of the offgas to reduce the total radioactivity) 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. <u>OR</u> B.2 Isolate SJAE. <u>OR</u> B.3.1 Be in MODE 3. <u>AND</u> B.3.2 Be in MODE 4.	12 hours  12 hours  12 hours  36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.5.1 .....NOTE.....</p> <p>Not required to be performed until 31 days after any main steam line not isolated and SJAE in operation.</p> <p>.....</p> <p>Verify the gross gamma activity rate of the noble gases is <math>\leq 600,000 \mu\text{Ci/second}</math>.</p>	<p>31 days</p> <p><u>AND</u></p> <p>With gross gamma activity rate <math>&gt; 5,000 \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>

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#### 3.7.6 The 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

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**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify one complete cycle of each main turbine bypass valve.	24 months
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

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### 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.	<p>A.1 .....NOTE..... LCO 3.0.3 is not applicable. .....</p> <p>Suspend movement of irradiated fuel assemblies in the spent fuel storage pool.</p>	Immediately

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.7.1 Verify the spent fuel storage pool water level is $\geq$ 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

- LC0 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
A. One offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit.	1 hour
	<u>AND</u>	<u>AND</u>
	A.2 Declare required feature(s) with no offsite power available inoperable when the redundant required feature(s) are inoperable.	Once per 8 hours thereafter
	<u>AND</u>	24 hours from discovery of no offsite power to one division concurrent with inoperability of redundant required feature(s)
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3 Restore offsite circuit to OPERABLE status.	7 days <u>AND</u> 21 days from discovery of failure to meet LCO
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>1 hour</p> <p><u>AND</u></p> <p>Once per 8 hours thereafter</p> <p>4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.3.1 Determine OPERABLE EDG subsystem is not inoperable due to common cause failure.	24 hours
	<u>OR</u>	
	B.3.2 Perform SR 3.8.1.2 for OPERABLE EDG subsystem.	24 hours
	<u>AND</u>	
	B.4 Restore EDG subsystem to OPERABLE status.	14 days
		<u>AND</u> 21 days from discovery of failure to meet LCO
C. Two offsite circuits inoperable.	C.1 Declare required feature(s) inoperable when the redundant required feature(s) are inoperable.	12 hours from discovery of Condition C concurrent with inoperability of redundant required feature(s)
	<u>AND</u>	
	C.2 Restore one offsite circuit to OPERABLE status.	7 days

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. One offsite circuit inoperable.</p> <p><u>AND</u></p> <p>One EDG subsystem inoperable.</p>	<p>-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.8.7, "Distribution Systems - Operating," when Condition D is entered with no AC power source to any division. -----</p> <p>D.1 Restore offsite circuit to OPERABLE status.</p> <p><u>OR</u></p> <p>D.2 Restore EDG subsystem to OPERABLE status.</p>	<p>12 hours</p> <p>12 hours</p>
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.	<p>F.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>F.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>
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
SR 3.8.1.2    -----NOTE----- All EDG subsystem starts may be preceded by an engine prelube period. ----- Verify each EDG subsystem starts from standby conditions, force parallels, and achieves: a.    in $\leq 10$ seconds voltage $\geq 3900$ V and frequency $\geq 58.8$ Hz; and b.    steady state voltage $\geq 3900$ V and $\leq 4400$ V and frequency $\geq 58.8$ Hz and $\leq 61.2$ Hz.	31 days

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<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>-----</p> <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>
<p>SR 3.8.1.4 Verify each day tank contains <math>\geq 327</math> gal of fuel oil.</p>	<p>31 days</p>
<p>SR 3.8.1.5 Check for and remove accumulated water from each day tank.</p>	<p>31 days</p>
<p>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.</p>	<p>31 days</p>

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RAI 3.8.1-05  
RAI 3.8.1-14



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.7 .....NOTE.....</p> <p>Only required to be met for each offsite circuit that is not energizing its respective 4.16 kV emergency bus.</p> <p>.....</p> <p>Verify automatic and manual transfer of plant power supply from the normal station service transformer to each offsite circuit.</p>	<p>24 months</p>
<p>SR 3.8.1.8 .....NOTE.....</p> <p>If performed with the EDG 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.</p> <p>.....</p> <p>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>

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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>

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RAI 3.8.1-12  
RAI 3.8.1-15

RAI 3.8.1-17

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 reserve or backfeed  power system; and</li> <li>e. Emergency loads are auto-connected in  the prescribed sequence from the  reserve or backfeed power system.</li> </ul>	<p>24 months</p>

RAI 3.8.1-12  
RAI 3.8.1-15

RAI 3.8.1-17

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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>

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RAI 3-8.1-18

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>

RAI 3.8.1-12  
RAI 3.8.1-15

RAI 3.8.1-17

RAI 3.8.1-19

### 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.

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RAI 38.2-1

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

ACTIONS

-----NOTE-----  
 LCO 3.0.3 is not applicable.  
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CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or both required offsite circuits inoperable.	-----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. -----	
	A.1 Declare affected required feature(s), with no offsite power available, inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND A.2.2 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	AND A.2.3 Initiate action to suspend operations with a potential for draining the reactor vessel (OPDRVs).	Immediately
	AND	
		(continued)

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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

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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>

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### 3.8 ELECTRICAL POWER SYSTEMS

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

LC0 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 < 180 psig and ≥ 150 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 subsystem inoperable.	Immediately

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains $\geq 32,000$ gal of fuel.	31 days
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 $\geq 180$ psig.	31 days
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	31 days

### 3.8 ELECTRICAL POWER SYSTEMS

#### 3.8.4 DC Sources – Operating

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

- a. 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

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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>	7 days
<p>SR 3.8.4.2    Verify each battery charger supplies <math>\geq 295</math> amps for 125 VDC subsystems at <math>\geq 128</math> VDC for <math>\geq 4</math> hours.</p>	24 months
<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>	24 months

(continued)

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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>

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### 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 onsite 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)

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# 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
	<p><u>AND</u></p> <p>A.2.4 Initiate action to restore required DC electrical power subsystems to OPERABLE status.</p>	Immediately

# SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.5.1 .....NOTE.....</p> <p>The following SRs are not required to be performed: SR 3.8.4.2, SR 3.8.4.3, and SR 3.8.4.4.</p> <p>.....</p> <p>For DC electrical power subsystems required to be OPERABLE the following SRs are applicable:</p> <p>SR 3.8.4.1, SR 3.8.4.2, SR 3.8.4.3, and SR 3.8.4.4.</p>	In accordance with applicable SRs

### 3.8 ELECTRICAL POWER SYSTEMS

#### 3.8.6 Battery Cell Parameters

LC0 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>	<u>AND</u>
		Once per 7 days thereafter
		(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)

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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 $\geq 60^{\circ}\text{F}$ 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(a)	> Minimum level indication mark, and $\leq \frac{1}{4}$ inch above maximum level indication mark(a)	Above top of plates, and not overflowing
Float Voltage	$\geq 2.13$ V	$\geq 2.13$ V	$> 2.07$ V
Specific Gravity(b)(c)	$\geq 1.195$	$\geq 1.195$  <u>AND</u>  Average of all connected cells $> 1.205$	Not more than 0.020 below average of all connected cells  <u>AND</u>  Average of all connected cells $\geq 1.195$

- (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)

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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, 125 VDC electrical power distribution subsystems to OPERABLE status.	Immediately
	<u>AND</u>	
	A.2.5 Declare associated required shutdown cooling subsystem(s) inoperable and not in operation.	Immediately

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
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

LCO 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

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**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 hoist, fuel loaded.</li> </ul>	<p>7 days</p>

### 3.9 REFUELING OPERATIONS

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

LC0 3.9.2 The refuel position one-rod-out interlock shall be OPERABLE.

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

#### ACTIONS

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

#### SURVEILLANCE REQUIREMENTS

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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

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

### 3.9 REFUELING OPERATIONS

#### 3.9.3 Control Rod Position

LC0 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 required channel.  
-----

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

ACTIONS

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

SURVEILLANCE REQUIREMENT

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



### 3.9 REFUELING OPERATIONS

#### 3.9.5 Control Rod OPERABILITY—Refueling

LCO 3.9.5 Each withdrawn control rod shall be OPERABLE.

APPLICABILITY: MODE 5.

#### ACTIONS

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

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.5.1 .....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

LCO 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. <u>AND</u> B.2 Initiate action to restore secondary containment to OPERABLE status. <u>AND</u>	Immediately  Immediately  (continued)

## ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.3 Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	<u>AND</u> B.4 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately

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

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 aligned or can be aligned to its 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><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.

RAI 3.10-4

ACTIONS

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

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

SURVEILLANCE REQUIREMENTS

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

### 3.10 SPECIAL OPERATIONS

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

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

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

LCO 3.9.4, "Control Rod Position Indication."

OR

2. A control rod withdrawal block is inserted;
- c. 1. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," MODE 5 requirements for Functions 1.a, 1.b, 7.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.

Am 3.10-4

ACTIONS

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

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

(continued)



ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

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

### 3.10 SPECIAL OPERATIONS

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

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- LCO 3.10.5 The requirements of LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation"; LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring"; and LCO 3.9.5, "Control Rod OPERABILITY-Refueling," may be suspended in MODE 5 to allow withdrawal of a single control rod, and subsequent removal of the associated CRD from a core cell containing one or more fuel assemblies, provided the following requirements are met:
- a. All other control rods are fully inserted; and
  - b. All other control rods in a five by five array centered on the withdrawn control rod are disarmed; at which time LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," MODE 5 requirements, may be changed to allow the single control rod withdrawn to be assumed to be the highest worth control rod.

AND

In conjunction with a. and b. above, the requirements of LCO 3.9.1, "Refueling Equipment Interlocks"; LCO 3.9.2, "Refuel Position One-Rod-Out Interlock"; and LCO 3.9.4, "Control Rod Position Indication" may be suspended, provided the following requirements are met:

- c. No other CORE ALTERATIONS are in progress; and
- d. A control rod withdrawal block is inserted.

APPLICABILITY: MODE 5 with LCO 3.9.5 not met.

#### ACTIONS

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

RAI 3.10-5

## ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.1 Initiate action to fully insert all control rods.	Immediately
	OR 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)

ACTIONS

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

SURVEILLANCE REQUIREMENTS

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

### 3.10 SPECIAL OPERATIONS

#### 3.10.7 Control Rod Testing-Operating

LCO 3.10.7 The requirements of LCO 3.1.6, "Rod Pattern Control," may be suspended to allow performance of SDM 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 a reactor engineer.

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 a reactor engineer.</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 a reactor engineer;
- c. Each withdrawn control rod shall be coupled to the associated CRD;
- d. All control rod withdrawals during out of sequence control rod moves shall be made in notch out mode;
- e. No other CORE ALTERATIONS are in progress; and
- f. CRD charging water header pressure  $\geq$  940 psig.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Separate Condition entry is allowed for each control rod. -----</p> <p>One or more control rods not coupled to its associated CRD.</p>	<p>-----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
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.	According to the applicable SRs
SR 3.10.8.2 .....NOTE..... Not required to be met if SR 3.10.8.3 satisfied. ..... Perform the MODE 2 applicable SRs for LCO 3.3.2.1, Function 2 of Table 3.3.2.1-1.	According to the applicable SRs
SR 3.10.8.3 .....NOTE..... Not required to be met if SR 3.10.8.2 satisfied. ..... Verify movement of control rods is in compliance with the approved control rod sequence for the SDM test by a second licensed operator or reactor engineer.	During control rod movement
SR 3.10.8.4 Verify no other CORE ALTERATIONS are in progress.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

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

## 4.0 DESIGN FEATURES

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### 4.1 Site 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.  $k_{eff} \leq 0.95$  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.  $k_{eff} \leq 0.90$  if dry;
- c.  $k_{eff} \leq 0.95$  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 367 ft 3 inches.

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#### 4.0 DESIGN FEATURES

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#### 4.3 Fuel Storage (continued)

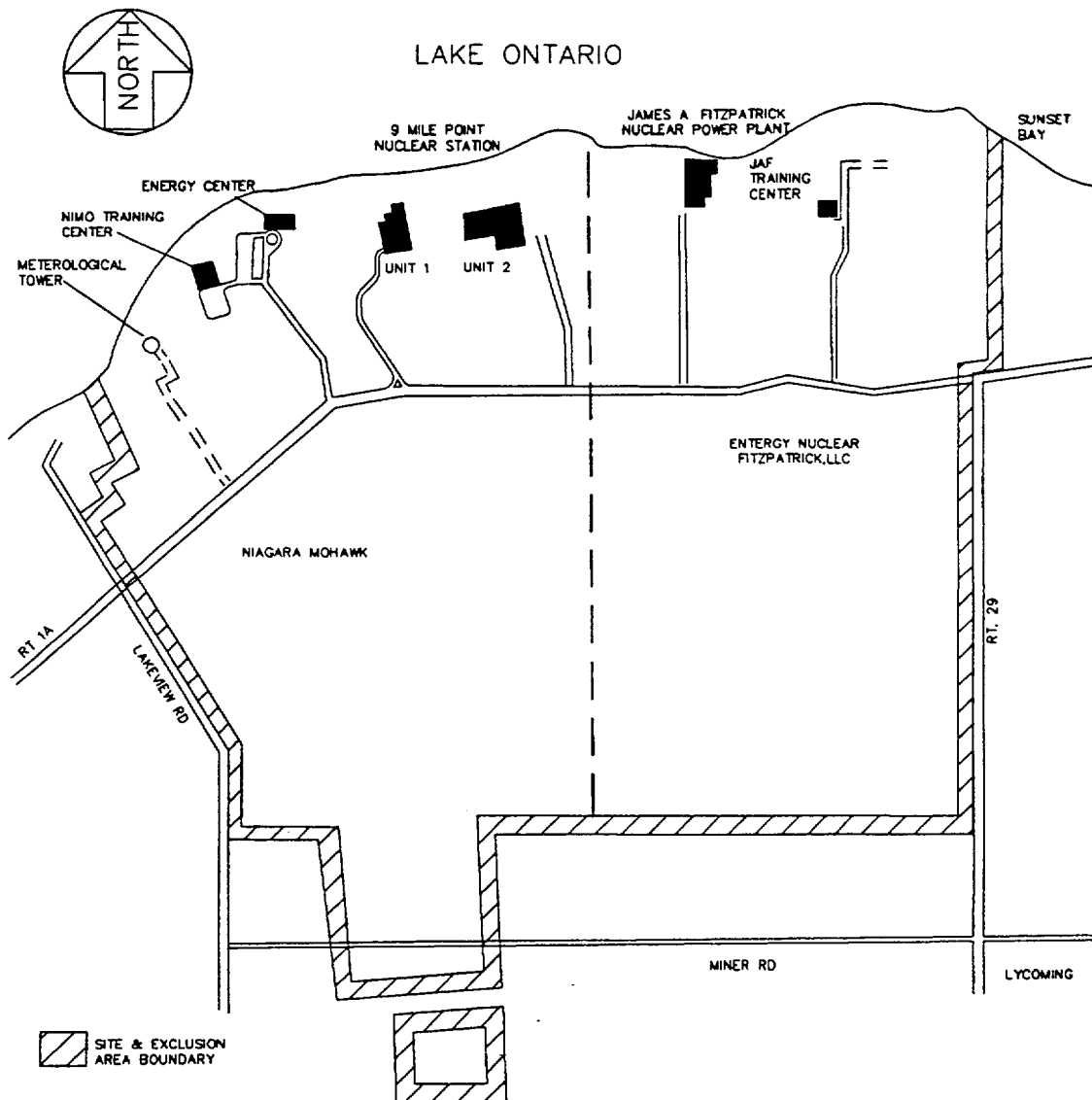
##### 4.3.3 Capacity

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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CTS correction





AMEND #268

OVERSIGHT CORRECTION

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.
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## 5.0 ADMINISTRATIVE CONTROLS

### 5.2 Organization

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#### 5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for 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/Quality Assurance Program;
- 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.

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(continued)

## 5.2 Organization (continued)

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### 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.
- 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.

5.2 Organization (continued)

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- 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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TS 5.3.1-258, R4

## 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 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 gases, 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.

(continued)

## 5.5 Programs and Manuals (continued)

### 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;

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## 5.5 Programs and Manuals

### 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.

(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,  $P_d$ , is 45 psig.
- b. The maximum allowable primary containment leakage rate,  $L_d$ , at  $P_d$ , 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  $\leq 1.0 L_d$ . During plant startup following testing in accordance with this program, the leakage rate acceptance criteria are  $\leq 0.60 L_d$  for the Type B and Type C tests, and  $\leq 0.75 L_d$  for the Type A tests.
  2. Air lock testing acceptance criteria are:
    - (a) Overall air lock leakage rate is  $\leq 0.05 L_d$  when tested at  $\geq P_d$ ; and
    - (b) For each door seal, leakage rate is  $\leq 120$  scfd when tested at  $\geq P_d$ .
  3. MSIV leakage rate acceptance criteria is  $\leq 11.5$  scfh for each MSIV when tested at  $\geq 25$  psig.

(continued)

## 5.5 Programs and Manuals

### 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:

ASME Boiler and Pressure  
Vessel Code and  
applicable Addenda  
terminology for  
inservice testing  
activities

Required Frequencies  
for performing inservice  
testing activities

Weekly  
Monthly  
Quarterly or every  
3 months  
Semiannually or  
every 6 months  
Every 9 months  
Yearly or annually  
Biennially or every  
2 years

At least once per 7 days  
At least once per 31 days  
At least once per 92 days  
At least once per 184 days  
At least once per 276 days  
At least once per 366 days  
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 (continued)

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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.

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(continued)

## 5.5 Programs and Manuals (continued)

### 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 inplace test of the HEPA filters shows a system bypass indicated 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.

Engineered Safeguards Ventilation System		Flowrate, scfm
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 inplace test of the charcoal adsorber shows system bypass indicated 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.

Engineered Safeguards Ventilation System		Flowrate, scfm
Standby Gas Treatment System	< 1.0%	5,400 to 6,600
Control Room Emergency Ventilation Air Supply System	< 0.5%	900 to 1,100

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(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.

Engineered Safeguards Ventilation System	Penetration	RH
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 as follows:

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

(continued)



## 5.5 Programs and Manuals

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

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

### 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);
- 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

(continued)

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## 5.5 Programs and Manuals

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

applicable ASTM Standards. The purpose of the program is to establish the following:

- 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 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 ASTM D-5452-1996, Method A except that the 0.8 micron filters specified in the ASTM may be replaced with membrane 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.

## 5.5 Programs and Manuals

### 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 5.5.11b 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 onsite diesel generator 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:

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## 5.5 Programs and Manuals

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

1. A required system redundant to system(s) supported by the inoperable support system is also inoperable; or
2. A required system redundant to system(s) in turn supported by the inoperable supported system is also inoperable; or
3. A required system redundant to support system(s) for the supported systems (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 supported 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 Action Statement for unplanned entry into the LCO Condition(s).
  - 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.

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#### 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.

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### 5.6.4 Monthly Operating Reports

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

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### 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 RATES (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) Allowable Value of Table 3.3.1.1-1;
  5. The Rod Block Monitor-Upscale 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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## 5.6 Reporting Requirements (continued)

### 5.7 High Radiation Area

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 less than or equal to 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 (e.g., radiation protection technicians) 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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5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

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5.7.1 High Radiation Areas with dose rates less than or equal to 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 individuals escorted by personnel qualified in radiation protection procedures, entry into such areas shall be made only after dose rates in the area have been evaluated 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.

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## 5.0 ADMINISTRATIVE CONTROLS

### 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:

- a. Each entrance or access point to such an area shall be conspicuously posted as a high radiation area and shall be 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 supervisor, 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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5.0 ADMINISTRATIVE CONTROLS

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)

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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 individuals escorted by personnel qualified in radiation protection procedures, entry into such areas shall be made only after dose rates in the area have been evaluated and entry personnel are knowledgeable of them.

5.0 ADMINISTRATIVE CONTROLS

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)

- f. Such individual areas that are within a larger area where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate, nor 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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