

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 3.4.9, “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 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 (SBGT) System”.

APPLICABILITY: MODE 4 with average reactor coolant temperature > 100°C (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 ≤ 100°C (212°F). ----- Enter the applicable Condition of the affected LCO. <u>OR</u>	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.1 Suspend activities that could increase the average reactor coolant temperature or pressure.	Immediately 24 hours
	<u>AND</u>	
	A.2.2 Reduce average reactor coolant temperature to $\leq 100^{\circ}\text{C}$ (212°F).	

SURVEILLANCE REQUIREMENTS

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

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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 (continued)

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

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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, 10, and 11 of Table 3.3.1.1-1, and LCO 3.9.5, “Control Rod OPERABILITY—Refueling”,

OR

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 All other control rods in a five by five array centered on the control rod being withdrawn are disarmed; at which time LCO 3.1.1, “SHUTDOWN MARGIN (SDM)”, MODE 3 requirements, may be changed to allow the single control rod withdrawn to be assumed to be the highest worth control rod.

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

ACTIONS

-----NOTE-----

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

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

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

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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, 10, and 11 of Table 3.3.1.1-1, and LCO 3.9.5, “Control Rod OPERABILITY—Refueling”,

OR

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

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

ACTIONS

-----NOTE-----

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

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

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3.10.5 Single Control Rod Drive (CRD) Removal—Refueling

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

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

APPLICABILITY: MODE 5 with LCO 3.9.5 not met.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	A.1 Suspend removal of the CRD mechanism.	Immediately
	<u>AND</u>	
	A.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u>	
	A.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.5.1	Verify all control rods, other than the control rod withdrawn for the removal of the associated CRD, are fully inserted.	24 hours
SR 3.10.5.2	Verify all control rods, other than the control rod withdrawn for the removal of the associated CRD, in a five by five array centered on the control rod withdrawn for the removal of the associated CRD, are disarmed.	24 hours
SR 3.10.5.3	Verify a control rod withdrawal block is inserted.	24 hours
SR 3.10.5.4	Perform SR 3.1.1.1.	According to SR 3.1.1.1
SR 3.10.5.5	Verify no CORE ALTERATIONS are in progress.	24 hours

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3.10.6 Multiple Control Rod Withdrawal—Refueling

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

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

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

ACTIONS

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

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

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

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3.10.7 Control Rod Testing—Operating

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

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

OR

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

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

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

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.10.7.2 -----NOTE----- Not required to be met if SR 3.10.7.1 satisfied. ----- 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>

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3.10.8 SHUTDOWN MARGIN (SDM) Test – Refueling

LCO 3.10.8 The reactor mode switch position specified in Table 1.1-1 for MODE 5 may be changed to include the startup/hot standby position, and operation considered not to be in MODE 2, to allow SDM testing, provided the following requirements are met:

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

OR

2. Conformance to the approved control rod sequence for the SDM test is verified by a second licensed operator or other qualified member of the technical staff;
- c. Each withdrawn control rod shall be coupled to the associated CRD;
- d. All control rod withdrawals during out of sequence control rod moves shall be made in notch out mode;
- e. No other CORE ALTERATIONS are in progress; and
- f. CRD charging water header pressure $\geq 70.3 \text{ kg/cm}^2$ (1000 psig)

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.10.8.2 -----NOTE----- Not required to be met if SR 3.10.8.3 satisfied. ----- Perform the MODE 2 applicable SRs for LCO 3.3.2.1, Function 2 of Table 3.3.2.1-1.</p>	<p>According to the applicable SRs</p>
<p>SR 3.10.8.3 -----NOTE----- Not required to be met if SR 3.10.8.2 satisfied. ----- Verify movement of control rods is in compliance with the approved control rod sequence for the SDM test by a second licensed operator or other qualified member of the technical staff.</p>	<p>During control rod movement</p>
<p>SR 3.10.8.4 Verify no other CORE ALTERATIONS are in progress.</p>	<p>12 hours</p>
<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 <u>AND</u> 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 \geq 70.3kg/cm² (1000psig)</p>	<p>7 days</p>

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3.10.9 Recirculation Loops - Testing

LCO 3.10.9 The requirements of LCO 3.4.1, “Recirculation Loops Operating”, may be suspended for ≤ 24 hours to allow:

- a. PHYSICS TESTS, provided THERMAL POWER is $\leq 5\%$ RTP; and
- b. Performance of the Startup Test Program.

APPLICABILITY: MODES 1 and 2 with less than two recirculation loops in operation.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of LCO 3.4.1 not met for > 24 hours	A.1 Insert all insertable control rods.	1 hour
B. Requirements of the LCO not met for reasons other than Condition A.	B.1 Place the reactor mode switch in the shutdown position.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.9.1 Verify LCO 3.4.1 requirements suspended for ≤ 24 hours.	1 hour
SR 3.10.9.2 Verify THERMAL POWER is $\leq 5\%$ RTP during PHYSICS TESTS.	1 hour

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3.10.10 Training Startups

LCO 3.10.10 The low pressure coolant injection (LPCI) OPERABILITY requirements specified in LCO 3.5.1, “Emergency Core Cooling Systems (ECCS) – Operating”, may be changed to allow one residual heat removal subsystem to be aligned in the shutdown cooling mode for training startups, provided the following requirements are met:

- a. All OPERABLE wide range neutron monitor (WRNM) channels are $\leq 25/40$ divisions of full scale on Range 7; and
- b. Average reactor coolant temperature is $< 100^{\circ}\text{C}$ (212°F).

APPLICABILITY: MODE 2 with one RHR subsystem lined up for the shutdown cooling mode.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	A.1 Place the reactor mode switch in the shutdown position.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.10.1 Verify all OPERABLE WRNM channels are $\leq 25/40$ divisions of full scale on Range 7.	1 hour
SR 3.10.10.2 Verify average reactor coolant temperature is $< 100^{\circ}\text{C}$ (212°F)	1 hour