

Multiple Control Rod Withdrawal—Refueling 3.10.6

3.10 SPECIAL OPERATIONS

3.10.6 Multiple Control Rod Withdrawal—Refueling

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

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

1.

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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
	AND	
	A.2 Suspend loading fuel assemblies.	Immediately
	AND	
		(continued)

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2. Fuel assemblies shall only be loaded when a positive means of assuring fuel assemblies cannot be loaded into a core cell associated with a withdrawn or removed control rod or removed CRD is in effect.

Multiple Control Rod Withdrawal—Refueling
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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 1. Only required to be met during fuel loading. 2. Not required to be met if SR 3.10.6.4 is satisfied for LCO 3.10.6.C.2 requirements. Verify fuel assemblies being loaded are in compliance with an approved spiral reload sequence.	24 hours

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SR 3.10.6.4 -----NOTES-----	
1. Only required to be met during fuel loading. 2. Not required to be met if SR 3.10.6.3 is satisfied for LCO 3.10.6.c.1 requirements. -----	
Verify a positive means of assuring fuel assemblies cannot be loaded into a core cell associated with a withdrawn or removed control rod or removed CRD is in effect.	24 hours

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BASES

APPLICABLE
SAFETY ANALYSES
(continued)

the cell. With no fuel assemblies in the core cell, the associated control rod has no reactivity control function and is not required to remain inserted. Prior to reloading fuel into the cell, however, the associated control rod must be inserted to ensure that an inadvertent criticality does not occur, as evaluated in the Reference 1 analysis.

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of the NRC Policy Statement apply. Special Operations LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. Operation in MODE 5 with LCO 3.9.3, "Control Rod Position," LCO 3.9.4, "Control Rod Position Indication," or LCO 3.9.5, "Control Rod OPERABILITY—Refueling," not met, can be performed in accordance with the Required Actions of these LCOs without meeting this Special Operations LCO or its ACTIONS. If multiple control rod withdrawal or removal, or CRD removal is desired, all four fuel assemblies are required to be removed from the associated cells. Prior to entering this LCO, any fuel remaining in a cell whose CRD was previously removed under the provisions of another LCO must be removed. "Withdrawal" in this application includes the actual withdrawal of the control rod as well as maintaining the control rod in a position other than the full-in position, and reinserting the control rod.

When loading fuel into the core with multiple control rods withdrawn, special spiral reload sequences are used to ensure that reactivity additions are minimized. Spiral reloading encompasses reloading a cell (four fuel locations immediately adjacent to a control rod) on the edge of a continuous fueled region (the cell can be loaded in any sequence). Otherwise, all control rods must be fully inserted before loading fuel.

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Alternately, a positive means of assuring fuel assemblies cannot be loaded into a core cell associated with a withdrawn or removed control rod or removed CRD will be in effect

Multiple Control Rod Withdrawal—Refueling
B 3.10.6

BASES (continued)

APPLICABILITY Operation in MODE 5 is controlled by existing LCOs. The exceptions from other LCO requirements (e.g., the ACTIONS of LCO 3.9.3, LCO 3.9.4 or LCO 3.9.5) allowed by this Special Operations LCO are appropriately controlled by requiring all fuel to be removed from cells whose "full in" indicators are allowed to be bypassed.

ACTIONS A.1, A.2, A.3.1, and A.3.2

If one or more of the requirements of this Special Operations LCO are not met, the immediate implementation of these Required Actions commences activities which will restore operation consistent with the normal requirements for refueling (i.e., all control rods inserted in core cells containing one or more fuel assemblies) or with the exceptions granted by this Special Operations LCO. The Completion Times are intended to require that these Required Actions be implemented in a very short time and carried through in an expeditious manner.

SURVEILLANCE
REQUIREMENTS

SR 3.10.6.1, SR 3.10.6.2, and SR 3.10.6.3

Periodic verification of the administrative controls established by this Special Operations LCO is prudent to preclude the possibility of an inadvertent criticality. The 24 hour Frequency is acceptable, given the administrative controls on fuel assembly and control rod removal, and takes into account other indications of control rod status available in the control room.

REFERENCES

1. UFSAR, Section 15.4.1.1.
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SR 3.10.6.3 and SR 3.10.6.4

SR 3.10.6.3 and SR 3.10.6.4 provide alternate methods of meeting the requirements of LCO 3.10.6.c when loading fuel assemblies (loading includes incore fuel shuffle since the fuel assembly being moved must be loaded into the new position). Each of these surveillances are to ensure the periodic verification of the administrative controls established by this Special Operations LCO to preclude the possibility of an inadvertent criticality.

SR 3.10.6.3 requires the compliance to an approved spiral reload sequence whenever control rod(s) are withdrawn or removed in accordance with this LCO and the possibility exists that fuel assemblies could be loaded in to a core cell with withdrawn or removed control rod(s). SR 3.10.6.3 requires that when loading fuel into the core with multiple control rods withdrawn, special spiral reload sequences are used to ensure that reactivity additions are minimized. Spiral reloading encompasses reloading a cell (four fuel locations immediately adjacent to a control rod) on the edge of a continuous fueled region (the cell can be loaded in any sequence). This SR is not required to be met when SR 3.10.6.4 is satisfied for LCO 3.10.6.c.2 requirements.

SR 3.10.6.4 provides an alternate method to assure that an unacceptable reactivity addition does not occur during fuel loading when control rod(s) are withdrawn or removed in accordance with this LCO. As a backup to refueling procedures this surveillance verifies the LCO 3.10.6.c.2 requirement that a positive means of assuring fuel assemblies cannot be loaded into a core cell with a withdrawn or removed control rod is in effect. The positive means entails a physical barrier such that even if refueling procedures were violated and an attempt was made to load a fuel assembly into a core cell with a withdrawn or removed control rod the action would be prevented. This requirement provides sufficient additional restrictions considering the plant condition because with no fuel assemblies in the core cell, the associated control rod has no reactivity control function and any fuel loading error other than loading the fuel assembly into a core cell with a withdrawn or removed control rod is bounded by the analyzed fuel assembly mispositioning events. This SR is not required to be met when SR 3.10.6.3 is satisfied for LCO 3.10.6.c.1 requirements.

The 24 hour Frequency of these surveillance is acceptable, given the administrative controls on fuel assembly and control rod removal, and takes into account other indications of control rod status available in the control room.

Mark-up of Affected Technical Specifications and Bases

River Bend Station

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- c. ^{1.} Fuel assemblies shall only be loaded in compliance with an approved spiral reload sequence.

Insert 3.10-16A

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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>	
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2. Fuel assemblies shall only be loaded when a positive means of assuring fuel assemblies cannot be loaded into a core cell associated with a withdrawn or removed control rod or removed CRD is in effect.

Multiple Control Rod Withdrawal—Refueling
3.10.6

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
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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----- 2. Not required to be met if SR 3.10.6.4 is satisfied for LCO 3.10.6.C.2 requirements. 1. 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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INSERT 3.10-17A

SR 3.10.6.4	NOTES
<div data-bbox="373 437 1024 584"><ul style="list-style-type: none">1. Only required to be met during fuel loading.2. Not required to be met if SR 3.10.6.3 is satisfied for LCO 3.10.6.c.1 requirements.</div>	
<div data-bbox="373 653 1084 799">Verify a positive means of assuring fuel assemblies cannot be loaded into a core cell associated with a withdrawn or removed control rod or removed CRD is in effect.</div>	<div data-bbox="1117 653 1247 685">24 hours</div>

Multiple Control Rod Withdrawal—Refueling
B 3.10.6

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

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Multiple Control Rod Withdrawal—Refueling
B 3.10.6

BASES (continued)

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ACTIONS A.1, A.2, A.3.1, and A.3.2

If one or more of the requirements of this Special Operations LCO are not met, the immediate implementation of these Required Actions commences activities which will restore operation consistent with the normal requirements for refueling (i.e., all control rods inserted in core cells containing one or more fuel assemblies) or with the exceptions granted by this Special Operations LCO. The Completion Times are intended to require that these Required Actions be implemented in a very short time and carried through in an expeditious manner.

SURVEILLANCE
REQUIREMENTS

SR 3.10.6.1, SR 3.10.6.2, and SR 3.10.6.3

Periodic verification of the administrative controls established by this Special Operations LCO is prudent to preclude the possibility of an inadvertent criticality. The 24 hour Frequency is acceptable, given the administrative controls on fuel assembly and control rod removal, and takes into account other indications of control rod status available in the control room.

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REFERENCES 1. USAR, Section 15.4.1.1.

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SR 3.10.6.3 and SR 3.10.6.4

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