

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.3

Single Control Rod Withdrawal Hot Shutdown

**DISCUSSION OF CHANGES (DOCs) TO THE
CTS**

DISCUSSION OF CHANGES
ITS: 3.10.3 - SINGLE CONTROL ROD WITHDRAWAL - HOT SHUTDOWN

ADMINISTRATIVE CHANGES

None

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

None

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

- L1 ITS 3.10.3 has been added to allow the reactor mode switch to be placed in the refuel position, allow a single control rod to be withdrawn, and still be considered to be in MODE 3, provided certain MODE 5 requirements are met. Currently, rods are not allowed to be withdrawn while in MODE 3. These additional requirements ensure that the one-rod-out interlock is Operable so that: 1) only the one rod is withdrawn, 2) all other control rods are fully inserted, and 3) RPS and control rod MODE 5 operability requirements are met or all other rods in a 5 x 5 array centered on the withdrawn rod are disarmed, allowing a modification to the way in which SDM is met. These additional requirements effectively compensate for the reactor mode switch not being in the shutdown position with a rod withdrawn. The proposed LCO imposes the same types of requirements on the plant as if the plant were in MODE 5. These requirements, coupled with Shutdown Margin requirements for the most reactive rod fully withdrawn, are adequate to prevent inadvertent criticality when a single rod is withdrawn for maintenance or testing.

TECHNICAL CHANGES - RELOCATIONS

None

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Single Control Rod Withdrawal Hot Shutdown

**NO SIGNIFICANT HAZARDS CONSIDERATION
(NSHC) FOR LESS RESTRICTIVE CHANGES**

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.10.3 - CONTROL ROD WITHDRAWAL - HOT SHUTDOWN

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

ITS 3.10.3 will allow the withdrawal of a single control rod while in MODE 3. The proposed changes will not increase the probability of an accident compared to a withdrawal of a rod while in MODE 5 because they will allow the withdrawal of only one control rod at a time while requiring the one-rod-out interlock to be Operable and other requirements imposed to ensure that all other rods remain fully inserted. This requirement, coupled with Shutdown Margin requirements for the most reactive rod fully withdrawn or removed, is adequate to prevent inadvertent criticality when a single rod is withdrawn for maintenance or testing. The proposed change involves interlocks and precautions designed to prevent an inadvertent criticality caused by withdrawing a single control rod while the reactor is shutdown. The consequences of an event occurring with the proposed change are the same as the consequences of an event occurring with the current requirements. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change imposes requirements to prevent an inadvertent criticality similar to those provided for MODE 5 operations. The proposed change will allow the withdrawal of only one control rod at a time while requiring the one-rod-out interlock to be Operable and other requirements imposed to ensure that all other rods remain fully inserted. This requirement, coupled with Shutdown Margin requirements for the most reactive rod fully withdrawn or removed, is adequate to prevent inadvertent criticality when a single rod is withdrawn for maintenance or testing. The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed). Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.10.3 - CONTROL ROD WITHDRAWAL - HOT SHUTDOWN

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

3. Does this change involve a significant reduction in a margin of safety?

The margin of safety is not reduced because the proposed requirements offer similar protection to those imposed during refueling. The proposed requirements of LCO 3.10.3 will allow the withdrawal of only one control rod at a time. This allowance is controlled by the reactor mode switch in the refuel position, or other precautions to prevent the withdrawal or removal of more than one rod (imposed by the proposed LCOs) and the requirement that adequate Shutdown Margin be maintained. These requirements are adequate to prevent an inadvertent criticality. Therefore, this change will not involve a significant reduction in a margin of safety.

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ITS: 3.10.3

Single Control Rod Withdrawal Hot Shutdown

**MARKUP OF NUREG-1433, REVISION 1
SPECIFICATION**

Single Control Rod Withdrawal—Hot Shutdown
3.10.3

3.10 SPECIAL OPERATIONS

3.10.3 Single Control Rod Withdrawal—Hot Shutdown

LCO 3.10.3

[L1]

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

DBI

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.

RAI 3.10-4

[L1]

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

BWR/4/STS
JAFNPD

3.10-6

Rev X, 04/07/95
Amendment No.

Typ
All
Pages

Single Control Rod Withdrawal—Hot Shutdown
3.10.3

ACTIONS

[L]

-----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>[L]</p>	<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> <p><u>OR</u></p> <p>A.2.1 Initiate action to fully insert all insertable control rods.</p> <p><u>AND</u></p> <p>A.2.2 Place the reactor mode switch in the shutdown position.</p>	<p>Immediately</p> <p>Immediately</p> <p>1 hour</p>

Single Control Rod Withdrawal—Hot Shutdown
3.10.3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>[L1] SR 3.10.3.1 Perform the applicable SRs for the required LCOs.</p>	<p>According to the applicable SRs</p>
<p>[L1] SR 3.10.3.2</p> <p style="text-align: center;">-----NOTE-----</p> <p>Not required to be met if SR 3.10.3.1 is satisfied for LCO 3.10.3.d.1 requirements.</p> <p>-----</p> <p>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.</p>	<p>24 hours</p>
<p>[L1] SR 3.10.3.3 Verify all control rods, other than the control rod being withdrawn, are fully inserted.</p>	<p>24 hours</p>

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.3

Single Control Rod Withdrawal Hot Shutdown

**JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1**

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.10.3 - SINGLE CONTROL ROD WITHDRAWAL - HOT SHUTDOWN

RETENTION OF EXISTING REQUIREMENT (CLB)

None

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

None

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 The brackets have been removed and the proper plant specific LCO Functions included.

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

None

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 Not Used

RAI 3.10-4

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.3

Single Control Rod Withdrawal Hot Shutdown

MARKUP OF NUREG-1433, REVISION 1, BASES

B 3.10 SPECIAL OPERATIONS

B 3.10.3 Single Control Rod Withdrawal—Hot Shutdown

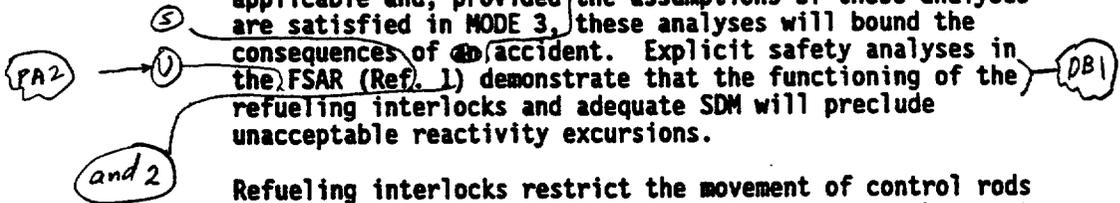
BASES

BACKGROUND

The purpose of this MODE 3 Special Operations LCO is to permit the withdrawal of a single control rod for testing while in hot shutdown, by imposing certain restrictions. In MODE 3, the reactor mode switch is in the shutdown position, and all control rods are inserted and blocked from withdrawal. Many systems and functions are not required in these conditions, due to the other installed interlocks that are actuated when the reactor mode switch is in the shutdown position. However, circumstances may arise while in MODE 3 that present the need to withdraw a single control rod for various tests (e.g., friction tests, scram timing, and coupling integrity checks). These single control rod withdrawals are normally accomplished by selecting the refuel position for the reactor mode switch. This Special Operations LCO provides the appropriate additional controls to allow a single control rod withdrawal in MODE 3.

APPLICABLE SAFETY ANALYSES

With the reactor mode switch in the refuel position, the analyses for control rod withdrawal during refueling are applicable and, provided the assumptions of these analyses are satisfied in MODE 3, these analyses will bound the consequences of an accident. Explicit safety analyses in the FSAR (Ref. 1) demonstrate that the functioning of the refueling interlocks and adequate SDM will preclude unacceptable reactivity excursions.



Refueling interlocks restrict the movement of control rods to reinforce operational procedures that prevent the reactor from becoming critical. These interlocks prevent the withdrawal of more than one control rod. Under these conditions, since only one control rod can be withdrawn, the core will always be shut down even with the highest worth control rod withdrawn if adequate SDM exists.

The control rod scram function provides backup protection to normal refueling procedures and the refueling interlocks, which prevent inadvertent criticalities during refueling.

(continued)

BWR/A/STS
JAFNPP

B 3.10-11

Rev 1, 04/07/95
Amendment No. 1
Typ All Pages

REVISION D

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

Alternate backup protection can be obtained by ensuring that a five by five array of control rods, centered on the withdrawn control rod, are inserted and incapable of withdrawal.

10 CFR 50.36 (c)(2)(ii)
(Ref. 3)

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.

XI

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. Operation in MODE 3 with the reactor mode switch in the refuel position can be performed in accordance with other Special Operations LCOs (i.e., LCO 3.10.2, "Reactor Mode Switch Interlock Testing," without meeting this Special Operations LCO or its ACTIONS. However, if a single control rod withdrawal is desired in MODE 3, controls consistent with those required during refueling must be implemented and this Special Operations LCO applied. "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. The refueling interlocks of LCO 3.9.2, "Refuel Position One-Rod-Out Interlock," required by this Special Operations LCO, will ensure that only one control rod can be withdrawn.

To back up the refueling interlocks (LCO 3.9.2), the ability to scram the withdrawn control rod in the event of an inadvertent criticality is provided by this Special Operations LCO's requirements in Item d.1. Alternately, provided a sufficient number of control rods in the vicinity of the withdrawn control rod are known to be inserted and incapable of withdrawal (Item d.2), the possibility of criticality on withdrawal of this control rod is sufficiently precluded, so as not to require the scram capability of the withdrawn control rod. Also, once this alternate (Item d.2) is completed, the SDM requirement to account for both the withdrawn-untrippable control rod and the highest worth control rod may be changed to allow the

LCO 3.1.1, "SHUT DOWN MARGIN (SDM)"
(continued)

PAI

BASES

LCO (continued) withdrawn-untrippable control rod to be the single highest worth control rod.

APPLICABILITY Control rod withdrawals are adequately controlled in MODES 1, 2, and 5 by existing LCOs. In MODES 3 and 4, control rod withdrawal is only allowed if performed in accordance with this Special Operations LCO or Special Operations LCO 3.10.4, and if limited to one control rod. This allowance is only provided with the reactor mode switch in the refuel position. For these conditions, the one-rod-out interlock (LCO 3.9.2), control rod position indication (LCO 3.9.4, "Control Rod Position Indication"), full insertion requirements for all other control rods and scram functions (LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," and LCO 3.9.5, "Control Rod OPERABILITY—Refueling"), or the added administrative controls in Item d.2 of this Special Operations LCO, minimize potential reactivity excursions.

preclude unacceptable

PAI

RAI 3.10-4

ACTIONS A Note has been provided to modify the ACTIONS related to a single control rod withdrawal while in MODE 3. Section 1.3, Completion Times, specifies once a Condition has been entered, subsequent divisions, subsystems, components or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for each requirement of the LCO not met provide appropriate compensatory measures for separate requirements that are not met. As such, a Note has been provided that allows separate Condition entry for each requirement of the LCO.

A.1

If one or more of the requirements specified in this Special Operations LCO are not met, the ACTIONS applicable to the stated requirements of the affected LCOs are immediately entered as directed by Required Action A.1. Required Action A.1 has been modified by a Note that clarifies the

(continued)

BASES

ACTIONS

A.1 (continued)

intent of any other LCO's Required Action, to insert all control rods. This Required Action includes exiting this Special Operations Applicability by returning the reactor mode switch to the shutdown position. A second Note has been added, which clarifies that this Required Action is only applicable if the requirements not met are for an affected LCO.

A.2.1 and A.2.2

Required Actions A.2.1 and A.2.2 are alternate Required Actions that can be taken instead of Required Action A.1 to restore compliance with the normal MODE 3 requirements, thereby exiting this Special Operations LCO's Applicability. Actions must be initiated immediately to insert all insertable control rods. Actions must continue until all such control rods are fully inserted. Placing the reactor mode switch in the shutdown position will ensure all inserted rods remain inserted and restore operation in accordance with Table 1.1-1. The allowed Completion Time of 1 hour to place the reactor mode switch in the shutdown position provides sufficient time to normally insert the control rods.

**SURVEILLANCE
REQUIREMENTS**

SR 3.10.3.1, SR 3.10.3.2, and SR 3.10.3.3

The other LCOs made applicable in this Special Operations LCO are required to have their Surveillances met to establish that this Special Operations LCO is being met. If the local array of control rods is inserted and disarmed while the scram function for the withdrawn rod is not available, periodic verification in accordance with SR 3.10.3.2 is required to preclude the possibility of criticality. SR 3.10.3.2 has been modified by a Note, which clarifies that this SR is not required to be met if SR 3.10.3.1 is satisfied for LCO 3.10.3.d.1 requirements, since SR 3.10.3.2 demonstrates that the alternative LCO 3.10.3.d.2 requirements are satisfied. Also, SR 3.10.3.3 verifies that all control rods other than the control rod being withdrawn are fully inserted. The 24 hour Frequency is acceptable because of the administrative

(continued)

BWR/4 STS

B 3.10-14

Rev 1, 04/07/95

The control rods can be hydraulically disarmed by closing the drive water and exhaust header water isolation valves. Electrically, the control rods can be disarmed by removing the four amphenol type plug connectors from the drive insert and withdrawal solenoids.

REVISION D

PAI

Single Control Rod Withdrawal—Hot Shutdown
B 3.10.3

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.10.3.1, SR 3.10.3.2, and SR 3.10.3.3 (continued).

controls on control rod withdrawal, the protection afforded by the LCOs involved, and hardwire interlocks that preclude additional control rod withdrawals.

REFERENCES

1. UFSAR, Section ~~15.2.3~~.

14.5.4.3

DB2

2. UFSAR, Section 14.5.4.4

DB1

3. 10 CFR 50.36 (c)(2)(ii)

X1

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.3

Single Control Rod Withdrawal Hot Shutdown

**JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1, BASES**

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.10.3 - SINGLE CONTROL ROD WITHDRAWAL - HOT SHUTDOWN

RETENTION OF EXISTING REQUIREMENT (CLB)

None

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

- PA1 The Bases have been revised for clarity, with no change in intent.
PA2 Changes have been made to reflect the plant specific nomenclature.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

- DB1 References have been revised to reflect JAFNPP specific information.
DB2 The brackets have been removed and the proper plant specific value/nomenclature has been provided.

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

None

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

- X1 NUREG-1433, Revision 1, Bases reference to "the NRC Policy Statement" has been replaced with 10 CFR 50.36(c)(2)(ii), in accordance with 60 FR 36953 effective August 18, 1995.
X2 Not Used

RA-1 3.10-4

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.3

Single Control Rod Withdrawal Hot Shutdown

**RETYPE PROPOSED IMPROVED TECHNICAL
SPECIFICATIONS (ITS) AND BASES**

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

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

B 3.10 SPECIAL OPERATIONS

B 3.10.3 Single Control Rod Withdrawal - Hot Shutdown

BASES

BACKGROUND

The purpose of this MODE 3 Special Operations LCO is to permit the withdrawal of a single control rod for testing while in hot shutdown, by imposing certain restrictions. In MODE 3, the reactor mode switch is in the shutdown position, and all control rods are inserted and blocked from withdrawal. Many systems and functions are not required in these conditions, due to the other installed interlocks that are actuated when the reactor mode switch is in the shutdown position. However, circumstances may arise while in MODE 3 that present the need to withdraw a single control rod for various tests (e.g., friction tests, scram timing, and coupling integrity checks). These single control rod withdrawals are normally accomplished by selecting the refuel position for the reactor mode switch. This Special Operations LCO provides the appropriate additional controls to allow a single control rod withdrawal in MODE 3.

APPLICABLE
SAFETY ANALYSES

With the reactor mode switch in the refuel position, the analyses for control rod withdrawal during refueling are applicable and, provided the assumptions of these analyses are satisfied in MODE 3, these analyses will bound the consequences of a postulated accident. Explicit safety analyses in the UFSAR (Refs. 1 and 2) demonstrate that the functioning of the refueling interlocks and adequate SDM will preclude unacceptable reactivity excursions.

Refueling interlocks restrict the movement of control rods to reinforce operational procedures that prevent the reactor from becoming critical. These interlocks prevent the withdrawal of more than one control rod. Under these conditions, since only one control rod can be withdrawn, the core will always be shut down even with the highest worth control rod withdrawn if adequate SDM exists.

The control rod scram function provides backup protection to normal refueling procedures and the refueling interlocks, which prevent inadvertent criticalities during refueling.

(continued)

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

Alternate backup protection can be obtained by ensuring that a five by five array of control rods, centered on the withdrawn control rod, are inserted and incapable of withdrawal.

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of 10 CFR 50.36(c)(2)(ii) (Ref. 3) 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 3 with the reactor mode switch in the refuel position can be performed in accordance with other Special Operations LCOs (i.e., LCO 3.10.2, "Reactor Mode Switch Interlock Testing," without meeting this Special Operations LCO or its ACTIONS. However, if a single control rod withdrawal is desired in MODE 3, controls consistent with those required during refueling must be implemented and this Special Operations LCO applied. "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. The refueling interlocks of LCO 3.9.2, "Refuel Position One-Rod-Out Interlock," required by this Special Operations LCO, will ensure that only one control rod can be withdrawn.

To back up the refueling interlocks (LCO 3.9.2), the ability to scram the withdrawn control rod in the event of an inadvertent criticality is provided by this Special Operations LCO's requirements in Item d.1. Alternately, provided a sufficient number of control rods in the vicinity of the withdrawn control rod are known to be inserted and incapable of withdrawal (Item d.2), the possibility of criticality on withdrawal of this control rod is sufficiently precluded, so as not to require the scram capability of the withdrawn control rod. Also, once this alternate (Item d.2) is completed, the LCO 3.1.1, "SHUTDOWN MARGIN (SDM)", SDM requirement to account for both the withdrawn-untrippable control rod and the highest worth

(continued)

BASES

LCO (continued) control rod may be changed to allow the withdrawn -untrippable control rod to be the single highest worth control rod.

RAI 3/10-4

APPLICABILITY Control rod withdrawals are adequately controlled in MODES 1, 2, and 5 by existing LCOs. In MODES 3 and 4, control rod withdrawal is only allowed if performed in accordance with this Special Operations LCO or Special Operations LCO 3.10.4, and if limited to one control rod. This allowance is only provided with the reactor mode switch in the refuel position. For these conditions, the one-rod-out interlock (LCO 3.9.2), control rod position indication (LCO 3.9.4, "Control Rod Position Indication"), full insertion requirements for all other control rods and scram functions (LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation", and LCO 3.9.5, "Control Rod OPERABILITY - Refueling"), or the added administrative controls in Item d.2 of this Special Operations LCO, preclude unacceptable reactivity excursions.

ACTIONS A Note has been provided to modify the ACTIONS related to a single control rod withdrawal while in MODE 3. Section 1.3, Completion Times, specifies once a Condition has been entered, subsequent divisions, subsystems, components or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for each requirement of the LCO not met provide appropriate compensatory measures for separate requirements that are not met. As such, a Note has been provided that allows separate Condition entry for each requirement of the LCO.

A.1

If one or more of the requirements specified in this Special Operations LCO are not met, the ACTIONS applicable to the stated requirements of the affected LCOs are immediately

(continued)

BASES

ACTIONS

A.1 (continued)

entered as directed by Required Action A.1. Required Action A.1 has been modified by a Note that clarifies the intent of any other LCO's Required Action, to insert all control rods. This Required Action includes exiting this Special Operations Applicability by returning the reactor mode switch to the shutdown position. A second Note has been added, which clarifies that this Required Action is only applicable if the requirements not met are for an affected LCO.

A.2.1 and A.2.2

Required Actions A.2.1 and A.2.2 are alternate Required Actions that can be taken instead of Required Action A.1 to restore compliance with the normal MODE 3 requirements, thereby exiting this Special Operations LCO's Applicability. Actions must be initiated immediately to insert all insertable control rods. Actions must continue until all such control rods are fully inserted. Placing the reactor mode switch in the shutdown position will ensure all inserted rods remain inserted and restore operation in accordance with Table 1.1-1. The allowed Completion Time of 1 hour to place the reactor mode switch in the shutdown position provides sufficient time to normally insert the control rods.

SURVEILLANCE
REQUIREMENTS

SR 3.10.3.1, SR 3.10.3.2, and SR 3.10.3.3

The other LCOs made applicable in this Special Operations LCO are required to have their Surveillances met to establish that this Special Operations LCO is being met. If the local array of control rods is inserted and disarmed while the scram function for the withdrawn rod is not available, periodic verification in accordance with SR 3.10.3.2 is required to preclude the possibility of criticality. The control rods can be hydraulically disarmed by closing the drive water and exhaust header water isolation valves. Electrically, the control rods can be disarmed by removing the four amphenol type plug connectors from the drive insert and withdrawal solenoids. SR 3.10.3.2 has been modified by a Note, which clarifies that this SR is

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.10.3.1, SR 3.10.3.2, and SR 3.10.3.3 (continued)

not required to be met if SR 3.10.3.1 is satisfied for LCO 3.10.3.d.1 requirements, since SR 3.10.3.2 demonstrates that the alternative LCO 3.10.3.d.2 requirements are satisfied. Also, SR 3.10.3.3 verifies that all control rods other than the control rod being withdrawn are fully inserted. The 24 hour Frequency is acceptable because of the administrative controls on control rod withdrawal, the protection afforded by the LCOs involved, and hardwire interlocks that preclude additional control rod withdrawals.

REFERENCES

1. UFSAR, Section 14.5.4.3.
 2. UFSAR, Section 14.5.4.4.
 3. 10 CFR 50.36(c)(2)(ii).
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JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.4

Single Control Rod Withdrawal Cold Shutdown

**MARKUP OF CURRENT TECHNICAL SPECIFICATIONS
(CTS)**

DISCUSSION OF CHANGES (DOCs) TO THE CTS

**NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)
FOR LESS RESTRICTIVE CHANGES**

MARKUP OF NUREG-1433, REVISION 1, SPECIFICATION

**JUSTIFICATION FOR DIFFERENCES (JFDs) FROM
NUREG-1433, REVISION 1**

MARKUP OF NUREG-1433, REVISION 1, BASES

**JUSTIFICATION FOR DIFFERENCES (JFDs) FROM
NUREG-1433, REVISION 1, BASES**

**RETYPE PROPOSED IMPROVED TECHNICAL
SPECIFICATIONS (ITS) AND BASES**

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.4

Single Control Rod Withdrawal Cold Shutdown

**MARKUP OF CURRENT TECHNICAL
SPECIFICATIONS (CTS)**

(41)

△

Insert New Specification 3.10.4

Insert new Specification 3.10.4 - "Single Control Rod Withdrawal - Cold Shutdown" as shown in the JAFNPP Improved Technical Specifications.

REVISION D

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.4

Single Control Rod Withdrawal Cold Shutdown

**DISCUSSION OF CHANGES (DOCs) TO THE
CTS**

DISCUSSION OF CHANGES
ITS: 3.10.4 - SINGLE CONTROL ROD WITHDRAWAL - COLD SHUTDOWN

ADMINISTRATIVE CHANGES

None

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

None

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

- L1 ITS 3.10.4 has been added to allow the reactor mode switch to be placed in the refuel position, allow a single control rod to be withdrawn and its associated control rod drive removed, and still be considered to be in MODE 4, provided certain MODE 5 requirements are met. Currently, rods are not allowed to be withdrawn while in MODE 4. These additional requirements ensure that the one-rod-out interlock is Operable or a control rod withdrawal block is inserted so that: 1) only the one rod is withdrawn, 2) all other control rods are fully inserted, and 3) RPS and control rod operability MODE 5 requirements are met or all other rods in a 5 x 5 array centered on the withdrawn rod are disarmed, allowing a modification to the way in which SDM is met. These additional requirements effectively compensate for the reactor mode switch not being in the shutdown position with a rod withdrawn. The proposed LCO imposes the same types of requirements on the plant as if the plant were in MODE 5. These requirements, coupled with Shutdown Margin requirements for the most reactive rod fully withdrawn, are adequate to prevent inadvertent criticality when a single rod is withdrawn for maintenance or testing.

TECHNICAL CHANGES - RELOCATIONS

None

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.4

Single Control Rod Withdrawal Cold Shutdown

**NO SIGNIFICANT HAZARDS CONSIDERATION
(NSHC) FOR LESS RESTRICTIVE CHANGES**

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.10.4 - CONTROL ROD WITHDRAWAL - COLD SHUTDOWN

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

ITS 3.10.4 will allow the withdrawal of a single control rod, and subsequent removal of the associated control rod drive while in MODE 4. The proposed changes will not increase the probability of an accident compared to a withdrawal of a rod while in MODE 5 because they will allow the withdrawal of only one control rod at a time while requiring that either the one-rod-out interlock and other requirements to ensure that all other rods remain fully inserted. This requirement, coupled with Shutdown Margin requirements for the most reactive rod fully withdrawn or removed, is adequate to prevent inadvertent criticality when a single rod is withdrawn for maintenance or testing. The proposed change involves interlocks and precautions designed to prevent an inadvertent criticality caused by withdrawing a single control rod while the reactor is shutdown. The consequences of an event occurring with the proposed change are the same as the consequences of an event occurring with the current requirements. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change imposes requirements to prevent an inadvertent criticality similar to those provided for MODE 5 operations. The proposed change will allow the withdrawal of only one control rod at a time while requiring that either the one-rod-out interlock and other requirements imposed to ensure that all other rods remain fully inserted. This requirement, coupled with Shutdown Margin requirements for the most reactive rod fully withdrawn or removed, is adequate to prevent inadvertent criticality when a single rod is withdrawn for maintenance or testing. The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed). Therefore, this change will not create the possibility of a

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.10.4 - CONTROL ROD WITHDRAWAL - COLD SHUTDOWN

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

2. (continued)

new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

The margin of safety is not reduced because the proposed requirements offer similar protection to those imposed during refueling. The proposed requirements of LCO 3.10.4 will allow the withdrawal of only one control rod at a time. This allowance is controlled by the reactor mode switch in the refuel position, or other precautions to prevent the withdrawal or removal of more than one rod (imposed by the proposed LCOs) and the requirement that adequate Shutdown Margin be maintained. These requirements are adequate to prevent an inadvertent criticality. Therefore, this change will not involve a significant reduction in a margin of safety.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.4

Single Control Rod Withdrawal Cold Shutdown

**MARKUP OF NUREG-1433, REVISION 1
SPECIFICATION**

Single Control Rod Withdrawal—Cold Shutdown
3.10.4

3.10 SPECIAL OPERATIONS

3.10.4 Single Control Rod Withdrawal—Cold Shutdown

[LI]

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,"

DBI

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.

RAM 3.10-4

[LI]

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

BWR/4 STS
JAFNPP

3.10-9

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REVISION D

Single Control Rod Withdrawal—Cold Shutdown
3.10.4

ACTIONS

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

[L1]

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)

Single Control Rod Withdrawal—Cold Shutdown
3.10.4

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
[L1] 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
[L1] SR 3.10.4.1 Perform the applicable SRs for the required LCOs.	According to the applicable SRs
[L1] SR 3.10.4.2 <p style="text-align: center;">-----NOTE----- Not required to be met if SR 3.10.4.1 is satisfied for LCO 3.10.4.c.1 requirements. -----</p> 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)

Single Control Rod Withdrawal—Cold Shutdown
3.10.4

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
[L1] SR 3.10.4.3 Verify all control rods, other than the control rod being withdrawn, are fully inserted.	24 hours
[L1] 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

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.4

Single Control Rod Withdrawal Cold Shutdown

**JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1**

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.10.4 - SINGLE CONTROL ROD WITHDRAWAL - COLD SHUTDOWN

RETENTION OF EXISTING REQUIREMENT (CLB)

None

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

None

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 The brackets have been removed and the proper plant specific Functions have been provided.

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

None

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 Not Used

RAI 3.10-4

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.4

Single Control Rod Withdrawal Cold Shutdown

MARKUP OF NUREG-1433, REVISION 1, BASES

B 3.10 SPECIAL OPERATIONS

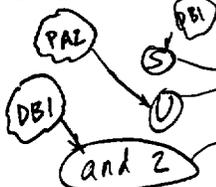
B 3.10.4 Single Control Rod Withdrawal—Cold Shutdown

BASES

BACKGROUND

The purpose of this MODE 4 Special Operations LCO is to permit the withdrawal of a single control rod for testing or maintenance, while in cold shutdown, by imposing certain restrictions. In MODE 4, the reactor mode switch is in the shutdown position, and all control rods are inserted and blocked from withdrawal. Many systems and functions are not required in these conditions, due to the installed interlocks associated with the reactor mode switch in the shutdown position. Circumstances may arise while in MODE 4, however, that present the need to withdraw a single control rod for various tests (e.g., friction tests, scram time testing, and coupling integrity checks). Certain situations may also require the removal of the associated control rod drive (CRD). These single control rod withdrawals and possible subsequent removals are normally accomplished by selecting the refuel position for the reactor mode switch.

APPLICABLE SAFETY ANALYSES



With the reactor mode switch in the refuel position, the analyses for control rod withdrawal during refueling are applicable and, provided the assumptions of these analyses are satisfied in MODE 4, these analyses will bound the consequences of an accident. Explicit safety analyses in the FSAR (Ref. 1) demonstrate that the functioning of the refueling interlocks and adequate SDM will preclude unacceptable reactivity excursions.

Refueling interlocks restrict the movement of control rods to reinforce operational procedures that prevent the reactor from becoming critical. These interlocks prevent the withdrawal of more than one control rod. Under these conditions, since only one control rod can be withdrawn, the core will always be shut down even with the highest worth control rod withdrawn if adequate SDM exists.

The control rod scram function provides backup protection in the event normal refueling procedures and the refueling interlocks fail to prevent inadvertent criticalities during refueling. Alternate backup protection can be obtained by

(continued)

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JAF/NIP

B 3.10-16

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All
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REVISION D

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

ensuring that a five by five array of control rods, centered on the withdrawn control rod, are inserted and incapable of withdrawal. This alternate backup protection is required when removing a CRD because this removal renders the withdrawn control rod incapable of being scrambled.

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.

10 CFR 50.36(c)(2)(ii)
(Ref. 3)

XI

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. Operation in MODE 4 with the reactor mode switch in the refuel position can be performed in accordance with other LCOs (i.e., Special Operations LCO 3.10.2, "Reactor Mode Switch Interlock Testing") without meeting this Special Operations LCO or its ACTIONS. If a single control rod withdrawal is desired in MODE 4, controls consistent with those required during refueling must be implemented and this Special Operations LCO applied. "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.

The refueling interlocks of LCO 3.9.2, "Refuel Position One-Rod-Out Interlock," required by this Special Operations LCO will ensure that only one control rod can be withdrawn.

INSERT
B3.10.4-1

At the time CRD removal begins, the disconnection of the position indication probe will cause LCO 3.9.4, "Control Rod Position Indication," and therefore, LCO 3.9.2 to fail to be met. Therefore, prior to commencing CRD removal, a control rod withdrawal block is required to be inserted to ensure that no additional control rods can be withdrawn and that compliance with this Special Operations LCO is maintained.

T-5TF-296

To back up the refueling interlocks (LCO 3.9.2) or the control rod withdrawal block, the ability to scram the withdrawn control rod in the event of an inadvertent criticality is provided by the Special Operations LCO requirements in Item c.1. Alternatively, when the scram

(continued)

TSTF-296

INSERT B3.10.4-1

The requirements of LCO 3.9.4, "Control Rod Position Indication" can continue to be met even when the control rod position indication probe is disconnected to allow de-coupling, provided the withdrawn control rod does not erroneously indicate "full-in." However, in the event the control rod does indicate "full-in" (either due to component malfunction or intentional jumpering to cause a "full-in" indication), ...

OT

BASES

LCO
(continued)

function is not OPERABLE, or when the CRD is to be removed, a sufficient number of rods in the vicinity of the withdrawn control rod are required to be inserted and made incapable of withdrawal (Item c.2). This precludes the possibility of criticality upon withdrawal of this control rod. Also, once this alternate (Item c.2) is completed, the SDM requirement to account for both the withdrawn-untrippable control rod and the highest worth control rod may be changed to allow the withdrawn-untrippable control rod to be the single highest worth control rod.

LCO 3.1.1, "SHUTDOWN MARGIN (SDM)"

PA1

APPLICABILITY

Control rod withdrawals are adequately controlled in MODES 1, 2, and 5 by existing LCOs. In MODES 3 and 4, control rod withdrawal is only allowed if performed in accordance with Special Operations LCO 3.10.3, or this Special Operations LCO, and if limited to one control rod. This allowance is only provided with the reactor mode switch in the refuel position.

During these conditions, the full insertion requirements for all other control rods, the one-rod-out interlock (LCO 3.9.2), control rod position indication (LCO 3.9.4), and scram functions (LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," and LCO 3.9.5, "Control Rod OPERABILITY—Refueling"), or the added administrative controls in Item b.2 and Item c.2 of this Special Operations LCO, provide mitigation of potential reactivity excursions.

RAM 3.10-4

ACTIONS

A Note has been provided to modify the ACTIONS⁴ related to a single control rod withdrawal while in MODE⁴. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for each requirement of the LCO not met provide appropriate compensatory measures for separate requirements that are not met. As such, a Note has been provided that allows separate Condition entry for each requirement of the LCO.

PA3

(continued)

BASES

ACTIONS
(continued)

A.1, A.2.1, and A.2.2

If one or more of the requirements of this Special Operations LCO are not met with the affected control rod insertable, these Required Actions restore operation consistent with normal MODE 4 conditions (i.e., all rods inserted) or with the exceptions allowed in this Special Operations LCO. Required Action A.1 has been modified by a Note that clarifies ~~that~~ the intent of any other LCO's Required Action to insert all control rods. This Required Action includes exiting this Special Operations Applicability by returning the reactor mode switch to the shutdown position. A second Note has been added to Required Action A.1 to clarify that this Required Action is only applicable if the requirements not met are for an affected LCO.

PAI

Required Actions A.2.1 and A.2.2 are specified, based on the assumption that the control rod is being withdrawn. If the control rod is still insertable, actions must be immediately initiated to fully insert all insertable control rods and within 1 hour place the reactor mode switch in the shutdown position. Actions must continue until all such control rods are fully inserted. The allowed Completion Time of 1 hour for placing the reactor mode switch in the shutdown position provides sufficient time to normally insert the control rods.

B.1, B.2.1, and B.2.2

If one or more of the requirements of this Special Operations LCO are not met with the affected control rod not insertable, withdrawal of the control rod and removal of the associated CRD must be immediately suspended. If the CRD has been removed, such that the control rod is not insertable, the Required Actions require the most expeditious action be taken to either initiate action to restore the CRD and insert its control rod, or initiate action to restore compliance with this Special Operations LCO.

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.10.4.1, SR 3.10.4.2, SR 3.10.4.3, and SR 3.10.4.4

The other LCOs made applicable by this Special Operations LCO are required to have their associated surveillances met to establish that this Special Operations LCO is being met. If the local array of control rods is inserted and disarmed while the scram function for the withdrawn rod is not available, periodic verification is required to ensure that the possibility of criticality remains precluded. Verification that all the other control rods are fully inserted is required to meet the SDM requirements. Verification that a control rod withdrawal block has been inserted ensures that no other control rods can be inadvertently withdrawn under conditions when position indication instrumentation is inoperable for the affected control rod. The 24 hour Frequency is acceptable because of the administrative controls on control rod withdrawals, the protection afforded by the LCOs involved, and hardware interlocks to preclude an additional control rod withdrawal.

SR 3.10.4.2 and SR 3.10.4.4 have been modified by Notes, which clarify that these SRs are not required to be met if the alternative requirements demonstrated by SR 3.10.4.1 are satisfied.

REFERENCES

1. UFSAR, Section (15.1.13)

14.5.4.3

DB2

2. UFSAR, Section 14.5.44

DB1

3. 10 CFR 50.36 (c)(2)(ii)

XI

The control rods can be hydraulically disarmed by closing the drive water and exhaust water isolation valves. The control rods can be electrically disarmed by disconnecting power from all four directional control valve solenoids.

PA4

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.4

Single Control Rod Withdrawal Cold Shutdown

**JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1, BASES**

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.10.4 - SINGLE CONTROL ROD WITHDRAWAL - COLD SHUTDOWN

RETENTION OF EXISTING REQUIREMENT (CLB)

None

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

- PA1 The Bases have been revised for clarity, with no change in intent.
- PA2 Changes have been made to reflect the plant specific nomenclature.
- PA3 The Bases have been revised to be consistent with the Specifications.
- PA4 The Bases have been revised to be consistent with other places in the Bases.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

- DB1 References have been revised to reflect JAFNPP specific information.
- DB2 The brackets have been removed and the proper plant specific value/nomenclature has been provided.

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

None

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

TSTF-296

- TP1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler number 296, Revision 0, have been incorporated into the revised Improved Technical Specifications.

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

RA1 3.10-4

- X1 NUREG-1433, Revision 1, Bases reference to "the NRC Policy Statement" has been replaced with 10 CFR 50.36(c)(2)(ii), in accordance with 60 FR 36953 effective August 18, 1995.
- X2 Not Used

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.4

Single Control Rod Withdrawal Cold Shutdown

**RETYPE PROPOSED IMPROVED TECHNICAL
SPECIFICATIONS (ITS) AND BASES**

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

(continued)

Single Control Rod Withdrawal - Cold Shutdown
3.10.4

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)

Single Control Rod Withdrawal - Cold Shutdown
3.10.4

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

B 3.10 SPECIAL OPERATIONS

B 3.10.4 Single Control Rod Withdrawal - Cold Shutdown

BASES

BACKGROUND

The purpose of this MODE 4 Special Operations LCO is to permit the withdrawal of a single control rod for testing or maintenance, while in cold shutdown, by imposing certain restrictions. In MODE 4, the reactor mode switch is in the shutdown position, and all control rods are inserted and blocked from withdrawal. Many systems and functions are not required in these conditions, due to the installed interlocks associated with the reactor mode switch in the shutdown position. Circumstances may arise while in MODE 4, however, that present the need to withdraw a single control rod for various tests (e.g., friction tests, scram time testing, and coupling integrity checks). Certain situations may also require the removal of the associated control rod drive (CRD). These single control rod withdrawals and possible subsequent removals are normally accomplished by selecting the refuel position for the reactor mode switch.

APPLICABLE
SAFETY ANALYSES

With the reactor mode switch in the refuel position, the analyses for control rod withdrawal during refueling are applicable and, provided the assumptions of these analyses are satisfied in MODE 4, these analyses will bound the consequences of a postulated accident. Explicit safety analyses in the UFSAR (Refs. 1 and 2) demonstrate that the functioning of the refueling interlocks and adequate SDM will preclude unacceptable reactivity excursions.

Refueling interlocks restrict the movement of control rods to reinforce operational procedures that prevent the reactor from becoming critical. These interlocks prevent the withdrawal of more than one control rod. Under these conditions, since only one control rod can be withdrawn, the core will always be shut down even with the highest worth control rod withdrawn if adequate SDM exists.

The control rod scram function provides backup protection in the event normal refueling procedures and the refueling interlocks fail to prevent inadvertent criticalities during refueling. Alternate backup protection can be obtained by ensuring that a five by five array of control rods, centered

(continued)

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

on the withdrawn control rod, are inserted and incapable of withdrawal. This alternate backup protection is required when removing a CRD because this removal renders the withdrawn control rod incapable of being scrammed.

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of 10 CFR 50.36(c)(2)(ii) (Ref. 3) 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 4 with the reactor mode switch in the refuel position can be performed in accordance with other LCOs (i.e., Special Operations LCO 3.10.2, "Reactor Mode Switch Interlock Testing") without meeting this Special Operations LCO or its ACTIONS. If a single control rod withdrawal is desired in MODE 4, controls consistent with those required during refueling must be implemented and this Special Operations LCO applied. "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.

The refueling interlocks of LCO 3.9.2, "Refuel Position One-Rod-Out Interlock," required by this Special Operations LCO will ensure that only one control rod can be withdrawn. The requirements of LCO 3.9.4, "Control Rod Position Indication" can continue to be met even when the control rod position indication probe is disconnected to allow de-coupling, provided the withdrawn control rod does not erroneously indicate "full-in." However, in the event the control rod does indicate "full-in" (either due to component malfunction or intentional jumpering to cause a "full-in" indication), a control rod withdrawal block is required to be inserted to ensure that no additional control rods can be withdrawn and that compliance with this Special Operations LCO is maintained.

To back up the refueling interlocks (LCO 3.9.2) or the control rod withdrawal block, the ability to scram the

(continued)

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BASES

LCO
(continued)

withdrawn control rod in the event of an inadvertent criticality is provided by the Special Operations LCO requirements in Item c.1. Alternatively, when the scram function is not OPERABLE, or when the CRD is to be removed, a sufficient number of rods in the vicinity of the withdrawn control rod are required to be inserted and made incapable of withdrawal (Item c.2). This precludes the possibility of criticality upon withdrawal of this control rod. Also, once this alternate (Item c.2) is completed, the LCO 3.1.1, "SHUTDOWN MARGIN (SDM)", SDM requirement to account for both the withdrawn-untrippable control rod and the highest worth control rod may be changed to allow the withdrawn-untrippable control rod to be the single highest worth control rod.

APPLICABILITY

Control rod withdrawals are adequately controlled in MODES 1, 2, and 5 by existing LCOs. In MODES 3 and 4, control rod withdrawal is only allowed if performed in accordance with Special Operations LCO 3.10.3, or this Special Operations LCO, and if limited to one control rod. This allowance is only provided with the reactor mode switch in the refuel position.

During these conditions, the full insertion requirements for all other control rods, the one-rod-out interlock (LCO 3.9.2), control rod position indication (LCO 3.9.4), and scram functions (LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," and LCO 3.9.5, "Control Rod OPERABILITY-Refueling"), or the added administrative controls in Item b.2 and Item c.2 of this Special Operations LCO, provide mitigation of potential reactivity excursions.

RA1 3.10-4

ACTIONS

A Note has been provided to modify the ACTIONS related to a single control rod withdrawal while in MODE 4. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for

(continued)

BASES

ACTIONS
(continued)

each requirement of the LCO not met provide appropriate compensatory measures for separate requirements that are not met. As such, a Note has been provided that allows separate Condition entry for each requirement of the LCO.

A.1, A.2.1, and A.2.2

If one or more of the requirements of this Special Operations LCO are not met with the affected control rod insertable, these Required Actions restore operation consistent with normal MODE 4 conditions (i.e., all rods inserted) or with the exceptions allowed in this Special Operations LCO. Required Action A.1 has been modified by a Note that clarifies the intent of any other LCO's Required Action to insert all control rods. This Required Action includes exiting this Special Operations Applicability by returning the reactor mode switch to the shutdown position. A second Note has been added to Required Action A.1 to clarify that this Required Action is only applicable if the requirements not met are for an affected LCO.

Required Actions A.2.1 and A.2.2 are specified, based on the assumption that the control rod is being withdrawn. If the control rod is still insertable, actions must be immediately initiated to fully insert all insertable control rods and within 1 hour place the reactor mode switch in the shutdown position. Actions must continue until all such control rods are fully inserted. The allowed Completion Time of 1 hour for placing the reactor mode switch in the shutdown position provides sufficient time to normally insert the control rods.

B.1, B.2.1, and B.2.2

If one or more of the requirements of this Special Operations LCO are not met with the affected control rod not insertable, withdrawal of the control rod and removal of the associated CRD must be immediately suspended. If the CRD has been removed, such that the control rod is not insertable, the Required Actions require the most expeditious action be taken to either initiate action to restore the CRD and insert its control rod, or initiate action to restore compliance with this Special Operations LCO.

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.10.4.1, SR 3.10.4.2, SR 3.10.4.3, and SR 3.10.4.4

The other LCOs made applicable by this Special Operations LCO are required to have their associated surveillances met to establish that this Special Operations LCO is being met. If the local array of control rods is inserted and disarmed while the scram function for the withdrawn rod is not available, periodic verification is required to ensure that the possibility of criticality remains precluded. The control rods can be hydraulically disarmed by closing the drive water and exhaust water isolation valves. The control rods can be electrically disarmed by disconnecting power from all four directional control valve solenoids. Verification that all the other control rods are fully inserted is required to meet the SDM requirements. Verification that a control rod withdrawal block has been inserted ensures that no other control rods can be inadvertently withdrawn under conditions when position indication instrumentation is inoperable for the affected control rod. The 24 hour Frequency is acceptable because of the administrative controls on control rod withdrawals, the protection afforded by the LCOs involved, and hardwire interlocks to preclude an additional control rod withdrawal.

SR 3.10.4.2 and SR 3.10.4.4 have been modified by Notes, which clarify that these SRs are not required to be met if the alternative requirements demonstrated by SR 3.10.4.1 are satisfied.

REFERENCES

1. UFSAR, Section 14.5.4.3.
 2. UFSAR, Section 14.5.4.4.
 3. 10 CFR 50.36(c)(2)(ii).
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JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.5

Single Control Rod Drive (CRD) Removal Refueling

**MARKUP OF CURRENT TECHNICAL
SPECIFICATIONS (CTS)**

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.5

Single Control Rod Drive (CRD) Removal Refueling

**MARKUP OF CURRENT TECHNICAL SPECIFICATIONS
(CTS)**

DISCUSSION OF CHANGES (DOCs) TO THE CTS

**NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)
FOR LESS RESTRICTIVE CHANGES**

MARKUP OF NUREG-1433, REVISION 1, SPECIFICATION

**JUSTIFICATION FOR DIFFERENCES (JFDs) FROM
NUREG-1433, REVISION 1**

MARKUP OF NUREG-1433, REVISION 1, BASES

**JUSTIFICATION FOR DIFFERENCES (JFDs) FROM
NUREG-1433, REVISION 1, BASES**

**RETYPE PROPOSED IMPROVED TECHNICAL
SPECIFICATIONS (ITS) AND BASES**

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.5

**Single Control Rod Drive (CRD) Removal
Refueling**

**MARKUP OF CURRENT TECHNICAL
SPECIFICATIONS (CTS)**

JAFNPP

see IRS:3.7.7

[3.10.5]

3.10 (cont'd)

4.10 (cont'd)

C. Spent Fuel Storage Pool Water Level

C. Spent Fuel Storage Pool Water Level

Whenever irradiated fuel is stored in the spent fuel storage pool, the pool water level shall be maintained at a minimum level of 33 ft.

Whenever irradiated fuel is stored in the spent fuel storage pool, the pool water level shall be recorded daily.

^{one} MI Control Rod and Control Rod Drive Maintenance [LCO 3.10.5]

^{one} MI Control Rod and Control Rod Drive Maintenance

1. ~~Two~~ control rods may be withdrawn from the reactor core to perform maintenance provided:

1. When ~~two~~ control rods are withdrawn from the reactor core for maintenance, the ~~following~~ surveillance shall be performed: ^{one} MI ^{A1}

a. The Reactor Mode Switch is locked in the Refuel position and all refueling interlocks are operable except for those necessary to perform the demonstration and maintenance described in Specification 4.10.D.1.

a. If the reactor vessel head is removed, specification 4.10.A.1 shall be satisfied.

b. Control rods ~~immediately face and diagonally adjacent~~ to the control rods to be withdrawn are fully inserted, electrically disarmed and sufficient margin to criticality demonstrated.

b. Demonstrate that the reactor core can be maintained subcritical with a margin of 0.38 percent Δk at any time during the maintenance with the analytically determined strongest worth operable control rod fully withdrawn. This margin shall be demonstrated after Specification 3.10.D.1 has been satisfied.

c. Control rods to be withdrawn are separated by three or more cells in any direction. (This specification does not apply to the control rods used to perform the demonstration required by Specification 3.10.D.1.b.)

add proposed LCOs LCO 3.10.5.d

[LCO 3.10.5]

[LCO 3.10.5.b]

L2

M2

Five by five array centered on the withdrawn control rod

M1

L2

Perform SR 3.1.1.1

add SR 3.10.5.1

M2

add SR 3.10.5.2

add SR 3.10.5.3
SR 3.10.5.5

M3

A2

add LCO 3.10.5.c

Amendment No. 58, 115

add Applicability

A4

add LCO allowance to suspend LCO 3.3.1.1 LCO 3.2.1.2 LCO 3.9.5

L3

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Specification 3.10.5

A1 ↓

JAFNPP

3.10 (cont'd)

2. More than two control rods may be withdrawn from the reactor core to perform maintenance provided:

a. Specification 3.10.A.5 is satisfied

4.10 (cont'd)

2. When more than two control rods are withdrawn from the reactor core for maintenance, the following surveillance shall be performed:

a. Specifications 4.10.A.1 and 4.10.A.2 shall be satisfied.

A3

add proposed ACTION A
M4

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.5

**Single Control Rod Drive (CRD) Removal
Refueling**

**DISCUSSION OF CHANGES (DOCs) TO THE
CTS**

DISCUSSION OF CHANGES
ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

ADMINISTRATIVE CHANGES

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- A1 In the conversion of the James A. FitzPatrick Nuclear Power Plant (JAFNPP) current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS) certain wording preferences or conventions are adopted which do not result in technical changes. Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with conventions in NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4", Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).
- A2 CTS 3.10.D provides restrictions on control rod and control rod drive maintenance. ITS 3.10.5.c was added to CTS 3.10.D to restrict all other CORE ALTERATIONS during the performance of this Special Operations LCO. This addition is considered administrative since CORE ALTERATIONS are currently addressed in other parts of CTS 3.10 (CTS 3.10.A.2 prohibits any fuel loading operations since all other control rods must be fully inserted unless loading in accordance with a spiral onload. Since the spiral onload allows refueling interlocks to be bypassed only in those cells which contain no fuel, fuel loading operations are not permitted when the plant is operating within CTS 3.10.D) and therefore implies that control rod withdrawal and CRD removal are the only provisions allowed by this Specification. This change is consistent with NUREG-1433, Revision 1.
- A3 CTS 3.10.D.2 and 4.10.D.2, are cross references to other requirements concerning the removal of more than two control rods. These cross references are not included in ITS 3.10.5. ITS 3.9.1, 3.9.2 and 3.10.6, are more than adequate to ensure the requirements are being met. The requirements are not affected, therefore this change is considered administrative. This change is consistent with NUREG-1433, Revision 1.
- A4 CTS 3.10.D allows two control rods to be withdrawn from the reactor core to perform maintenance. Therefore, since maintenance is allowed to be performed, the withdrawn control rods may not be Operable. ITS 3.10.5 specifies the Applicability of this Specification to be MODE 5 with LCO 3.9.5 not met. ITS LCO 3.9.5 requires each withdrawn control rod to be Operable. Since CTS 3.10.D allows control rods to not be Operable (since maintenance is allowed to be performed), the addition of this Applicability is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

- M1 CTS 3.10.D.1 allows two control rods to be withdrawn from the reactor for maintenance. ITS 3.10.5 allows only one control rod to be withdrawn and subsequently removed from a core cell containing one or more fuel

DISCUSSION OF CHANGES
ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 (continued)

assemblies. The number of control rods allowed to be withdrawn (with fuel assemblies not removed from around the control rod) has been reduced to one. The removal of more than one control rod will be controlled in accordance with ITS 3.10.6 (CTS 3.10.A) consistent with NUREG-1433, Revision 1. Since only one control rod may be withdrawn, the separation criteria of CTS 3.10.D.1.c has been deleted and the new requirement (ITS LCO 3.10.5.a) will be to have all other control rods fully inserted. In addition, ITS SR 3.10.5.1 has been added to verify all control rods, other than the control rod withdrawn for the removal of the associated CRD, are fully inserted every 24 hours. This change is more restrictive on plant operation but necessary to ensure adequate shutdown margin is maintained at all times. This change is consistent with NUREG-1433, Revision 1.

M2 The current requirement in CTS 3.10.D.1.b to disarm the control rods immediately facing and diagonally adjacent to the control rods to be withdrawn has been increased to include all control rods in a 5 x 5 array centered on the withdrawn control rod as reflected in proposed ITS 3.10.5.b. In addition, ITS SR 3.10.5.2 has been added to verify the specified control rods are disarmed every 24 hours. This change will ensure the backup protection that the Reactor Protection System and the Refuel Position one-rod-out interlock would have otherwise provided. This change is more restrictive on plant operation, and consistent with NUREG-1433, Revision 1.

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M3 Two new Surveillances have been added to the requirements of CTS 4.10.D. ITS SR 3.10.5.3 will require the verification that a control rod block is inserted and ITS SR 3.10.5.5 will require that no other CORE ALTERATIONS are in progress every 24 hours. These added requirements are necessary to ensure that LCO 3.10.5.d and 3.10.5.c are being met as long as the plant is operating in accordance with this Special Operations LCO.

M4 ITS 3.10.5 ACTION A has been added to the requirements of CTS 3.10.D if one or more of the requirements of the LCO are not met. This ACTION will require the immediate suspension of the CRD mechanism removal and the immediate initiation of action to fully insert all control rods or to initiate immediate action to satisfy the requirements of this LCO. Since there are no current ACTIONS, the addition of this explicit ACTION is considered more restrictive but necessary to ensure the appropriate corrective actions are taken in an expeditious manner.

DISCUSSION OF CHANGES
ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

None

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

- L1 CTS 3.10.D.1.a requires the reactor mode switch to be locked in the refuel position and all refueling interlocks operable except for those necessary to perform the demonstration and maintenance described in CTS 4.10.D.1 when two control rods are withdrawn to perform maintenance. ITS LCO 3.10.5 will allow 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" 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: 1) all other control rods are fully inserted (M1); 2) all other control rods in a five by five array centered on the withdrawn control rod are disarmed (CTS 3.10.D.1.b and M2) 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 (CTS 3.10.D.1.b and L2); 3) a control rod withdrawal block is inserted; and 4) no other CORE ALTERATIONS are in progress (A2). This change is less restrictive since the CTS requires that the reactor mode switch be in refuel and that all refueling interlocks (except the one-rod-out interlock for two control rods on which maintenance is being performed) be Operable. ITS LCO 3.10.5 will not require the Operability of any refueling interlock and will not require the mode switch to be locked in the refuel position. The function of the refueling interlocks, and the requirement to lock the mode switch in the refuel position (thus ensuring the one-rod-interlock is not bypassed), in combination with adequate SDM is to preclude unacceptable reactivity excursions. This change is acceptable since, first, the Specification requires that whenever one control rod drive is removed it prevents any additional control rod withdrawal (i.e., all other rods must be inserted and all other rods in a 5 x 5 array centered on the withdrawn control rod must be disarmed. Secondly, requiring that all other CORE ALTERATIONS are prohibited and the added requirement that a control rod block must be inserted, prevents any positive reactivity insertion. Therefore, all the refuel interlocks (e.g., refuel platform fuel grapple, fuel loaded, one-rod-out interlock) and the requirement to lock the mode switch in refuel are not required to preclude an inadvertent criticality. The requirements of the proposed Specification effectively accomplishes the functions of the refueling interlocks. Therefore, the assumptions of the design basis accidents will be maintained while operating under this LCO. Since the requirements of ITS LCOs 3.9.1 and 3.9.2 may be

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DISCUSSION OF CHANGES
ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 (continued)

suspended during the application of this Special Operations LCO, the associated Surveillances of these LCOs are not applicable, therefore, the requirements in CTS 4.10.D.1.a to perform the Surveillance Requirements of CTS 4.10.A.1 have been deleted.

L2 CTS 4.10.D.1.b requires the performance of a shutdown margin (SDM) demonstration and that adequate margin is maintained during the maintenance with the analytically determined strongest worth operable control rod fully withdrawn. This demonstration shall be performed after CTS 3.10.D.1 has been satisfied. CTS 3.10.D.1.b requires the demonstration to be performed prior to the withdrawal of the control rods for maintenance. CTS 3.10.D allows up to two control rods with fuel assemblies loaded into the associated core cells to be withdrawn. Therefore, adequate SDM should be maintained throughout the maintenance work with these two rods and the analytically determined strongest worth operable control rod withdrawn. The SDM demonstration is currently required to be performed prior to performing any maintenance. ITS SR 3.10.5.4 requires SR 3.1.1.1, the SDM verification, to be performed in accordance with its associated surveillance frequency. ITS 3.10.5 allows withdrawal of only one control rod from core cells containing fuel (M1). Withdrawal/removal of multiple control rods is only allowed in accordance with ITS 3.10.6, and then, only if all four fuel assemblies have been removed from the core cells associated with each control rod or control rod drive being removed. ITS SR 3.1.1.1 requires SDM to be verified to be within limits prior to each in-vessel fuel movement during a fuel loading sequence and once within 4 hours after criticality following fuel movement within the reactor pressure vessel or control rod replacement. In addition, ITS 3.10.5.b allows the SDM verification to be changed to allow the single control rod withdrawn to be assumed to be the highest worth control rod.

This change is less restrictive in two ways. SDM can be verified in accordance with the Frequency of SR 3.1.1.1 instead of demonstrated prior to maintenance and the verification can be met by allowing the single control rod to be withdrawn to be assumed to be the highest worth control rod. The allowance that the single control rod to be withdrawn can be assumed to be the highest worth control rod is acceptable due to existing an added requirements of the proposed Specification. These requirements are 1) all other control rods are fully inserted (M1); and 2) all other control rods in a five by five array centered on the withdrawn control rod are disarmed (CTS 3.10.D.1.b and M2). The requirements are adequate to preclude the possibility of an inadvertent

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DISCUSSION OF CHANGES

ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L2 (continued)

criticality during operations under Special Operations LCO 3.10.5 by minimizing the possibility of any positive reactivity insertion (control rod withdrawal or fuel loading). Since all other control rods must be inserted and since provisions are made to ensure additional control rods cannot be withdrawn (by inserting a control rod block and disarming the other control rods in a five by five array centered on the withdrawn control rod), control rod withdrawal is not likely to occur. In addition, all other CORE ALTERATIONS are prohibited, therefore fuel cannot be loaded. These provisions are adequate to avoid any inadvertent criticality and ensure adequate SDM. The allowance that SDM can be verified in accordance with the Frequency of SR 3.1.1.1 is acceptable since this Frequency is adequate to ensure that operations under this Special Operations LCO will be performed with adequate SDM. In addition, SR 3.0.1 requires this SR to be met during the MODES or other specified conditions in the Applicability unless otherwise stated in the SR. Failure to meet this Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be considered a failure to meet the LCO. Therefore, the requirements of ITS SR 3.10.5.4 and SR 3.0.1 will still ensure the required SDM is met during operations within LCO 3.10.5 and the maintenance activity.

- L3 An allowance has been added to CTS 3.10.D (ITS LCO 3.10.5) to suspend the requirements for automatic scram capability during control rod and control rod drive maintenance. ITS LCO 3.10.5 explicitly states that 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" may be suspended in MODE 5 to allow the withdrawal of a single control rod, and subsequent removal of the associated CRD from a core cell containing one or more fuel assemblies provided: 1) all other control rods are fully inserted (M1); and 2) all other control rods in a five by five array centered on the withdrawn control rod are disarmed (CTS 3.10.D.1.b and M2) 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 (CTS 3.10.D.1.b and L2). This change is acceptable since the proposed requirements are adequate to preclude the possibility of an inadvertent criticality and maintains adequate SDM during operations under Special Operations LCO 3.10.5. The proposed requirements prevent positive reactivity insertion by maintaining operable refueling and one-rod-out interlocks, or by inserting a control rod block and suspension of CORE ALTERATIONS. This ensures that the reactivity added by the removal of one control rod does

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DISCUSSION OF CHANGES
ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L3 (continued)

not result in an inadvertent criticality. As such, the scram function is not required in this condition since the possibility of an inadvertent criticality has been minimized. The CRD removal requires isolation of the CRD from the CRD Hydraulic System, thereby resulting in an inoperable control rod, therefore this allowance is necessary if the CRD maintenance requires the isolation of the CRD Hydraulic System.

TECHNICAL CHANGES - RELOCATIONS

None

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.5

**Single Control Rod Drive (CRD) Removal
Refueling**

**NO SIGNIFICANT HAZARDS CONSIDERATION
(NSHC) FOR LESS RESTRICTIVE CHANGES**

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change and has concluded that it does not involve a significant hazards consideration. Our conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change affects the status of the refueling interlocks while a single control rod drive is removed. The existing Specification requires that the reactor mode switch be in refuel and that all refueling interlocks (except the one-rod-out interlock for two control rods on which maintenance is being performed) be Operable. The proposed Specification will not require Operability of any refueling interlocks and will allow the mode switch to be in the shutdown position. This change will not increase the probability of an accident (inadvertent criticality) for two reasons. First, the Specification requires that whenever one control rod drive is removed, all other rods must be inserted and all other rods in a 5 x 5 array centered on the withdrawn control rod must be disarmed. Then, prior to defeating the refueling interlocks, a control rod block must be inserted. This effectively accomplishes the actions of the refueling interlocks. Second, both the existing requirement (CTS 3.10.D.a) and the proposed requirement (LCO 3.10.5) authorize defeating the refueling interlocks for the control rod drive being removed by bypassing the full-in position indication signals for those rods. The refueling interlocks provide protection from a reactivity excursion by ensuring that control rods are fully inserted prior to the start of Core Alterations. With the full-in signal for the rod in the cells affected by the Core Alteration bypassed, the refueling interlocks provide no protection from a reactivity excursion. The consequences of an accident are not increased because the only purpose of the reactor mode switch in refuel and the Operability of the associated refueling interlocks is to prevent an accident. The interlocks have no functions associated with the mitigation of the consequences of an accident that has already occurred. As a result, the consequences of an event occurring with the proposed change are the same as the consequences of an event occurring with the current requirements. Additional requirements ensure that no other Core Alterations are performed during this Special Operation. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change affects the status of the refueling interlocks while a single control rod drive is removed. The change does not create the possibility of a new or different type of accident because all other control rods are inserted, the rods in a 5 x 5 array centered on the withdrawn control rod are disarmed, and a control rod block is inserted. In addition, the proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed). Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

The margin of safety is not reduced by the proposed change. The proposed change affects the status of the refueling interlocks while a single control rod drive is removed. In the proposed Specification, prior to bypassing the one-rod-out interlock and the removal of one control rod drive, the other control rods are inserted and the rods in a 5 x 5 array centered on the withdrawn control rod are disarmed. Then, prior to defeating the refueling interlocks, a control rod block must be inserted. These actions essentially perform the function of the refueling interlocks. Therefore, this change does not involve a significant reduction in a margin of safety.

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NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L2 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change and has concluded that it does not involve a significant hazards consideration. Our conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

This change allows the SDM to be verified in accordance with the frequency of SR 3.1.1.1 instead of demonstrated prior to maintenance and the verification can be met by allowing the single control rod to be withdrawn to be assumed to be the highest worth control rod. The method of complying with the SDM requirements does not influence the assumptions relative to the initiation of any accident. Therefore, this change does not significantly increase the probability of an accident previously analyzed. The proposed requirements preclude the possibility of an accident (inadvertent criticality). The following requirements must be met during any single CRD removal process: 1) all other control rods are fully inserted; 2) 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; 3) a control rod withdrawal block is inserted; and 4) no other CORE ALTERATIONS are in progress. In addition, the Surveillances associated with ITS 3.10.5 must be met along with the requirements of SR 3.0.1. SR 3.0.1 requires the SRs of the proposed Specification to be met during the MODES or other specified conditions in the Applicability unless otherwise stated in the SR. Failure to meet the Surveillances, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be considered a failure to meet the LCO. These proposed requirements are adequate to prevent a positive reactivity insertion by prohibiting any additional control rod withdrawal and any fuel loading. The SHUTDOWN MARGIN verification ensures the reactivity added by the removal of one control rod meets the requirements of LCO 3.1.1 during operations in the Special Operations LCO and additional SDM verifications or demonstrations are not necessary. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TSTF-296

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L2 CHANGE

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The Shutdown Margin verification required by ITS SR 3.1.1.1, and the allowance in ITS 3.10.5.c to allow the single control rod to be withdrawn to be assumed to be the highest worth control rod is adequate for the withdrawal of a single control rod. Deleting the requirement to perform a Shutdown Margin demonstration prior to performing control rod or control rod drive maintenance will not introduce a new mode of plant operation and does not involve physical modification to the plant. Additional Shutdown Margin verifications or demonstrations are not necessary. Therefore it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

Deleting the requirement to perform a Shutdown Margin verification prior to performing control rod or control rod drive maintenance without first removing fuel assemblies will not reduce a margin of safety because proposed ITS 3.10.5 and ITS 3.10.6 allow only one control rod to be withdrawn from core cells containing fuel assemblies and proposed SR 3.1.1.1 requires verification that adequate shutdown margin exists for the highest worth control rod being fully withdrawn. In addition, SR 3.0.1 requires this SR to be met during the MODES or other specified conditions in the Applicability unless otherwise stated in the SR. Failure to meet this Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be considered a failure to meet the LCO. The requirements of ITS SR 3.10.5.4 and SR 3.0.1 will still ensure the required SDM is met during operations within LCO 3.10.5 and the maintenance activity. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L3 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change and has concluded that it does not involve a significant hazards consideration. Our conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change has been added to allow a single control rod drive (CRD) to be withdrawn and subsequently removed without maintaining automatic scram capability. This change is acceptable since the proposed requirements are adequate to preclude the possibility of an inadvertent criticality and ensure adequate shutdown margin (SDM) during operations under the Special Operations LCO. Therefore, there is no need for scram capability. The CRD removal requires isolation of the CRD from the CRD Hydraulic System, thereby causing inoperability of the control rod, therefore this allowance is necessary if the CRD maintenance requires the isolation of the CRD Hydraulic System. Since all other rods are required to be inserted, the scram functions are not required. The proposed requirements preclude the possibility of an accident (inadvertent criticality). The following requirements must be met during any single CRD removal process: 1) all other control rods are fully inserted; and 2) 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. Requiring all other control rods to be fully inserted, the disarming of the control rods in a five by five array centered on the withdrawn control rod, and the SHUTDOWN MARGIN verification, while maintaining operable one-rod-out interlocks (or in lieu of these interlocks, imposing the requirement to insert a control rod block, and the requirement that no other CORE ALTERATIONS are allowed) precludes the need for the control rod scram function. These requirements prevent a positive reactivity insertion by prohibiting any additional control rod withdrawal and any fuel loading. The SHUTDOWN MARGIN verification ensures the reactivity added by the removal of one control rod meets the requirements of LCO 3.1.1. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L3 CHANGE

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change affects the status of Reactor Protection System (RPS) instrumentation, RPS electric power monitoring assemblies and control rod Operability while a single control rod drive is removed. The change does not create the possibility of a new or different type of accident because all other control rods are inserted, the rods in a 5 x 5 array centered on the withdrawn control rod are disarmed. Also, either operable refueling and one-rod-out interlocks are maintained, or a control rod block is inserted and no additional CORE ALTERATIONS are permitted. In addition, the proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed). Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

The margin of safety is not reduced by the proposed change. The proposed change affects the status of RPS instrumentation, RPS electric power monitoring assemblies and control rod Operability while a single control rod drive is removed. In the proposed Specification, prior to suspending the automatic scram capability requirements and prior to the removal of one control rod drive, the other control rods are inserted, the rods in a 5 x 5 array centered on the withdrawn control rod are disarmed, and SHUTDOWN MARGIN requirements must be met. Also, either operable refueling and one-rod-out interlocks are maintained, or a control rod block is inserted and no other CORE ALTERATIONS are in progress. These actions essentially preclude the possibility of an inadvertent criticality. Therefore, this change does not involve a significant reduction in a margin of safety.

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JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.5

**Single Control Rod Drive (CRD) Removal
Refueling**

**MARKUP OF NUREG-1433, REVISION 1
SPECIFICATION**

3.10 SPECIAL OPERATIONS

3.10.5 Single Control Rod Drive (CRD) Removal—Refueling

LCO 3.10.5

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

INSERT
3.10.5-1

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

APPLICABILITY: MODE 5 with LCO 3.9.5 not met.

ACTIONS

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

(114)

PA2

RAY 310-5 (Revised this package)

BWR/STS
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3.10-13

Rev 1/04/07/95
Amendment No. 1

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TPI

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:

[3.10.D.1]
3.10.D.1.a

TSTF-296

[M1]

a. All other control rods are fully inserted; and

[3.10.D.1.b] [M2]

[3.10.D.1.b] [L2]

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.

(PAI)

AND

[3.10.D.1]
3.10.D.1.a

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:

(PAI)

[A2]

c. No other CORE ALTERATIONS are in progress; and

[L1]

d. A control rod withdrawal block is inserted.

ACTIONS		
CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued) [M4]	A.2.1 Initiate action to fully insert all control rods. OR A.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately Immediately

SURVEILLANCE REQUIREMENTS		FREQUENCY
SURVEILLANCE		
[M1] 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
[M2] 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
[M3] SR 3.10.5.3	Verify a control rod withdrawal block is inserted.	24 hours
[4.10.2.1.5] L2 SR 3.10.5.4	Perform SR 3.1.1.1.	According to SR 3.1.1.1

(continued)

SURVEILLANCE REQUIREMENTS (continued)

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

[M3]

other

PAI

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.5

**Single Control Rod Drive (CRD) Removal
Refueling**

**JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1**

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.10.5 - SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

RETENTION OF EXISTING REQUIREMENT (CLB)

None

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA1 Changes have been made to correct typographical errors and omissions.

PA2 Changes have been made to reflect plant specific nomenclature. JAFNPP utilizes CRD without the addition of "mechanism." "CRD" without the use of "mechanism" is also used in the LCO statement and various Bases descriptions throughout the NUREG.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

None

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

None

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

TP1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler number 296, Revision 0, have been incorporated into the revised Improved Technical Specifications.

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 Not used

RAI 3.10-5 (revised reply)

TSTF-296

RAI 3.10-5

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.5

**Single Control Rod Drive (CRD) Removal
Refueling**

MARKUP OF NUREG-1433, REVISION 1, BASES

B 3.10 SPECIAL OPERATIONS

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

BASES

BACKGROUND

The purpose of this MODE 5 Special Operations LCO is to permit the removal of a single CRD during refueling operations by imposing certain administrative controls. Refueling interlocks restrict the movement of control rods and the operation of the refueling equipment to reinforce operational procedures that prevent the reactor from becoming critical during refueling operations. During refueling operations, no more than one control rod is permitted to be withdrawn from a core cell containing one or more fuel assemblies. The refueling interlocks use the "full in" position indicators to determine the position of all control rods. If the "full in" position signal is not present for every control rod, then the all rods in permissive for the refueling equipment interlocks is not present and fuel loading is prevented. Also, the refuel position one-rod-out interlock will not allow the withdrawal of a second control rod.

PAI

The control rod scram function provides backup protection in the event normal refueling procedures, and the refueling interlocks described above fail to prevent inadvertent criticalities during refueling. The requirement for this function to be OPERABLE precludes the possibility of removing the CRD once a control rod is withdrawn from a core cell containing one or more fuel assemblies. This Special Operations LCO provides controls sufficient to ensure the possibility of an inadvertent criticality is precluded, while allowing a single CRD to be removed from a core cell containing one or more fuel assemblies. The removal of the CRD involves disconnecting the position indication probe, which causes noncompliance with LCO 3.9.4, "Control Rod Position Indication," and, therefore, LCO 3.9.1, "Refueling Equipment Interlocks," and LCO 3.9.2, "Refueling Position One-Rod-Out Interlock." The CRD removal also requires isolation of the CRD from the CRD Hydraulic System, thereby causing inoperability of the control rod (LCO 3.9.5, "Control Rod OPERABILITY—Refueling").

TPI

INSERT
B 3.10.5-1

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(continued)

B 3.10-21

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Rev 1, 04/07/95
Amendment No.

Typ
All
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REVISION D

INSERT B3.10.5-1

TSTF-296

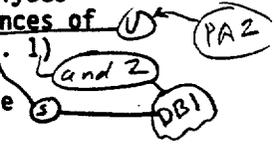
The requirements of LCO 3.9.4, "Control Rod Position Indication" can continue to be met even when the control rod position indication probe is disconnected to allow de-coupling, provided the withdrawn control rod does not erroneously indicate "full-in." However, in the event the control rod does indicate "full-in" (either due to component malfunction or intentional jumpering to cause a "full-in" indication), this Special Operation LCO has provisions for this event.

or

BASES (continued)

APPLICABLE
SAFETY ANALYSES

With the reactor mode switch in the refuel position, the analyses for control rod withdrawal during refueling are applicable and, provided the assumptions of these analyses are satisfied, these analyses will bound the consequences of accidents. Explicit safety analyses in the FSAR (Ref. 1) demonstrate that proper operation of the refueling interlocks and adequate SDM will preclude unacceptable reactivity excursions.



Refueling interlocks restrict the movement of control rods and the operation of the refueling equipment to reinforce operational procedures that prevent the reactor from becoming critical. These interlocks prevent the withdrawal of more than one control rod. Under these conditions, since only one control rod can be withdrawn, the core will always be shut down even with the highest worth control rod withdrawn if adequate SDM exists. By requiring all other control rods to be inserted and a control rod withdrawal block initiated, the function of the inoperable one-rod-out interlock (LCO 3.9.2) is adequately maintained. This Special Operations LCO requirement to suspend all CORE ALTERATIONS adequately compensates for the inoperable all rods in permissive for the refueling equipment interlocks (LCO 3.9.1).



The control rod scram function provides backup protection to normal refueling procedures and the refueling interlocks, which prevent inadvertent criticalities during refueling. Since the scram function and refueling interlocks may be suspended, alternate backup protection required by this Special Operations LCO is obtained by ensuring that a five by five array of control rods, centered on the withdrawn control rod, are inserted and are incapable of being withdrawn (by insertion of a control rod block).

INSERT
B 3.10.5-2

10 CFR 50.36 (c)(2)(ii)
(Ref. 3)

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.

TSR-296

XI

(continued)

INSERT B3.10.5-2

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... and all other control rods are fully inserted. The requirements of LCO 3.9.4, "Control Rod Position Indication" (and therefore LCO 3.9.1 and LCO 3.9.2) can continue to be met even when the control rod position indication probe is disconnected to allow de-coupling, provided the withdrawn control rod does not erroneously indicate "full-in." However, in the event the control rod does indicate "full-in" (either due to component malfunction ~~or~~ intentional jumpering to cause a "full-in" indication), ...

or

INSERT B3.10.5-2

T5TF-296

... and all other control rods are fully inserted. The requirements of LCO 3.9.4, "Control Rod Position Indication" (and therefore LCO 3.9.1 and LCO 3.9.2) can continue to be met even when the control rod position indication probe is disconnected to allow de- "full-in." However, in the event the control rod does indicate "full-in" (either due to component malfunction of intentional jumpering to cause a "full-in" indication), ...

BASES (continued)

LCO

As described in LCO 3.0.7, ^{or} compliance with this Special ^{either} Operations LCO is optional. Operation in MODE 5 with ^{any of} the following LCOs, LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," ~~LCO 3.9.1, LCO 3.9.2, LCO 3.9.4, or LCO 3.9.5~~ not met, can be performed in accordance with the Required Actions of these LCOs without meeting this Special Operations LCO or its ACTIONS. However, if a single CRD removal from a core cell containing one or more fuel assemblies is desired in MODE 5, ^{and} controls consistent with those required by LCO 3.3.1.1, LCO 3.3.8.2, ~~LCO 3.9.1, LCO 3.9.2, LCO 3.9.4, and LCO 3.9.5~~ must be implemented, and this Special Operations LCO applied.

INSERT
B 3.10.5-3

PA3
that no other
are in progress

INSERT
B 3.10.5-4

By requiring all other control rods to be inserted and a control rod withdrawal block initiated, the function of the inoperable one-rod-out interlock (LCO 3.9.2) is adequately maintained. This Special Operations LCO requirement ~~to suspend all~~ CORE ALTERATIONS, adequately compensates for the inoperable all rods in permissive for the refueling equipment interlocks (LCO 3.9.1). Ensuring that the five by five array of control rods, centered on the withdrawn control rod, are inserted and incapable of withdrawal adequately satisfies the backup protection that LCO 3.3.1.1 and ~~LCO 3.9.2~~ would have otherwise provided. Also, once ^{this} ~~these requirements (items a, b, and c) are completed,~~ the SDM requirement to account for both the withdrawn-untrippable control rod and the highest worth control rod may be changed to allow the withdrawn-untrippable control rod to be the single highest worth control rod.

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APPLICABILITY

Operation in MODE 5 is controlled by existing LCOs. The allowance to comply with this Special Operations LCO in lieu of the ACTIONS of LCO 3.3.1.1, LCO 3.3.8.2, LCO 3.9.1, LCO 3.9.2, LCO 3.9.4, and LCO 3.9.5 is appropriately controlled with the additional administrative controls required by this Special Operations LCO, which reduce the potential for reactivity excursions.

(continued)

INSERT B3.10.5-3

"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.

INSERT B310.5-4

The requirements of LCO 3.9.4, "Control Rod Position Indication" (and therefore LCO 3.9.1 and LCO 3.9.2) can continue to be met even when the control rod position indication probe is disconnected to allow de-coupling, provided the withdrawn control rod does not erroneously indicate "full-in." However, in the event the control rod does indicate "full-in" (either due to component malfunction or intentional jumpering to cause a "full-in" indication), ...

or

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BASES (continued)

ACTIONS

A.1, A.2.1, and A.2.2

If one or more of the requirements of this Special Operations LCO are not met, the immediate implementation of these Required Actions restores operation consistent with the normal requirements for failure to meet LCO 3.3.1.1, LCO 3.9.1, LCO 3.9.2, LCO 3.9.4, and LCO 3.9.5 (i.e., all control rods inserted) or with the allowances of this Special Operations LCO. The Completion Times for Required Action A.1, Required Action A.2.1, and Required Action A.2.2 are intended to require that these Required Actions be implemented in a very short time and carried through in an expeditious manner to either initiate action to restore the CRD and insert its control rod, or initiate action to restore compliance with this Special Operations LCO. Actions must continue until either Required Action A.2.1 or Required Action A.2.2 is satisfied.

SURVEILLANCE REQUIREMENTS

SR 3.10.5.1, SR 3.10.5.2, SR 3.10.5.3, SR 3.10.5.4, and SR 3.10.5.5

Verification that all the control rods, other than the control rod withdrawn for the removal of the associated CRD, are fully inserted is required to ensure the SDM is within limits. Verification that the local five by five array of control rods, other than the control rod withdrawn for removal of the associated CRD, is inserted and disarmed, while the scram function for the withdrawn rod is not available, is required to ensure that the possibility of critically remains precluded. Verification that a control rod withdrawal block has been inserted ensures that no other control rods can be inadvertently withdrawn under conditions when position indication instrumentation is inoperable for the withdrawn control rod. The Surveillance for LCO 3.1.1, which is made applicable by this Special Operations LCO, is required in order to establish that this Special Operations LCO is being met. Verification that no other CORE ALTERATIONS are being made is required to ensure the assumptions of the safety analysis are satisfied.

PA4

The control rods can be hydraulically disarmed by closing the drive water and exhaust water isolation valves. The control rods can be electrically disarmed by disconnecting power from all four directional control valve solenoids.

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

and

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(continued)

BASES

**SURVEILLANCE
REQUIREMENTS**

SR 3.10.5.1, SR 3.10.5.2, SR 3.10.5.3, SR 3.10.5.4,
and SR 3.10.5.5 (continued)

controls on control rod removal and hardwire interlock to
block an additional control rod withdrawal.

REFERENCES

1. ^{PA2} ~~UFSAR, Section 15.1.23~~

14.5.4.3

DB2

2. UFSAR, Section 14.5.4.4

DB1

3. 10 CFR 50.36 (e)(2)(ii)

X1

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.5

**Single Control Rod Drive (CRD) Removal
Refueling**

**JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1, BASES**

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.10.5 - SINGLE CONTROL ROD DRIVE REMOVAL - REFUELING

RETENTION OF EXISTING REQUIREMENT (CLB)

None

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

- PA1 Changes have been made to correct typographical errors and omissions.
- PA2 The Bases have been revised to reflect the appropriate JAFNPP nomenclature.
- PA3 The Bases have been revised to be consistent with the Specifications.
- PA4 The Bases have been revised to be consistent with other places in the Bases.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

- DB1 The Bases have been revised to reflect the appropriate JAFNPP references.
- DB2 The brackets have been removed and the proper plant specific references have been incorporated.

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

None

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

- TP1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler number 296, Revision 0, have been incorporated into the revised Improved Technical Specifications.

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

- X1 NUREG-1433, Revision 1, Bases reference to "the NRC Policy Statement" has been replaced with 10 CFR 50.36(c)(2)(ii), in accordance with 60 FR 36953 effective August 18, 1995.

TSTF-296

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.5

**Single Control Rod Drive (CRD) Removal
Refueling**

**RETYPE PROPOSED IMPROVED TECHNICAL
SPECIFICATIONS (ITS) AND BASES**

3.10 SPECIAL OPERATIONS

3.10.5 Single Control Rod Drive (CRD) Removal - Refueling

TSTF - 296

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

RAI 3.10-5

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.1 Initiate action to fully insert all control rods.	Immediately
	<p style="text-align: center;"><u>OR</u></p> 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

B 3.10 SPECIAL OPERATIONS

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

BASES

BACKGROUND

The purpose of this MODE 5 Special Operations LCO is to permit the removal of a single CRD during refueling operations by imposing certain administrative controls. Refueling interlocks restrict the movement of control rods and the operation of the refueling equipment to reinforce operational procedures that prevent the reactor from becoming critical during refueling operations. During refueling operations, no more than one control rod is permitted to be withdrawn from a core cell containing one or more fuel assemblies. The refueling interlocks use the "full-in" position indicators to determine the position of all control rods. If the "full-in" position signal is not present for every control rod, then the all rods in permissive for the refueling equipment interlocks is not present and fuel loading is prevented. Also, the refuel position one-rod-out interlock will not allow the withdrawal of a second control rod.

The control rod scram function provides backup protection in the event normal refueling procedures, and the refueling interlocks described above fail to prevent inadvertent criticalities during refueling. The requirement for this function to be OPERABLE precludes the possibility of removing the CRD once a control rod is withdrawn from a core cell containing one or more fuel assemblies. This Special Operations LCO provides controls sufficient to ensure the possibility of an inadvertent criticality is precluded, while allowing a single CRD to be removed from a core cell containing one or more fuel assemblies. The removal of the CRD involves disconnecting the position indication probe. The requirements of LCO 3.9.4, "Control Rod Position Indication," can continue to be met even when the control rod position indication probe is disconnected to allow decoupling, provided the withdrawn control rod does not erroneously indicate "full-in." However, in the event the control rod does indicate "full-in" (either due to component malfunction or intentional jumpering to cause a "full-in" indication), this Special Operation LCO has provisions for

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(continued)

BASES

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BACKGROUND
(continued)

this event. The CRD removal also requires isolation of the CRD from the CRD Hydraulic System, thereby causing inoperability of the control rod (LCO 3.9.5, "Control Rod OPERABILITY - Refueling").

APPLICABLE
SAFETY ANALYSES

With the reactor mode switch in the refuel position, the analyses for control rod withdrawal during refueling are applicable and, provided the assumptions of these analyses are satisfied, these analyses will bound the consequences of accidents. Explicit safety analyses in the UFSAR (Refs. 1 and 2) demonstrate that proper operation of the refueling interlocks and adequate SDM will preclude unacceptable reactivity excursions.

Refueling interlocks restrict the movement of control rods and the operation of the refueling equipment to reinforce operational procedures that prevent the reactor from becoming critical. These interlocks prevent the withdrawal of more than one control rod. Under these conditions, since only one control rod can be withdrawn, the core will always be shut down even with the highest worth control rod withdrawn if adequate SDM exists.

The control rod scram function provides backup protection to normal refueling procedures and the refueling interlocks, which prevent inadvertent criticalities during refueling. Since the scram function is suspended, alternate backup protection required by this Special Operations LCO is obtained by ensuring that a five by five array of control rods, centered on the withdrawn control rod, are inserted and are incapable of being withdrawn and all other control rods are fully inserted. The requirements of LCO 3.9.4, "Control Rod Position Indication" (and therefore LCO 3.9.1 and LCO 3.9.2) can continue to be met even when the control rod position indication probe is disconnected to allow decoupling, provided the withdrawn control rod does not erroneously indicate "full-in." However, in the event the control rod does indicate "full-in" (either due to component malfunction or intentional jumpering to cause a "full-in" indication), the function of the inoperable one-rod-out interlock (LCO 3.9.2) is adequately maintained by requiring all other control rods to be inserted and a control rod withdrawal block initiated. This Special Operations LCO

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(continued)

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

requirement that no other CORE ALTERATIONS are in progress adequately compensates for the inoperable all rods in permissive for the refueling equipment interlocks (LCO 3.9.1).

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of 10 CFR 50.36(c)(2)(ii) (Ref. 3) 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 either the following LCOs, LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," or LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," not met, can be performed in accordance with the Required Actions of these LCOs without meeting this Special Operations LCO or its ACTIONS. However, if a single CRD removal from a core cell containing one or more fuel assemblies is desired in MODE 5, controls consistent with those required by LCO 3.3.1.1 and LCO 3.3.8.2 must be implemented, and this Special Operations LCO applied. "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.

Ensuring that the five by five array of control rods, centered on the withdrawn control rod, are inserted and incapable of withdrawal adequately satisfies the backup protection that LCO 3.3.1.1 would have otherwise provided. Also, once this requirement is completed, the SDM requirement to account for both the withdrawn-untrippable control rod and the highest worth control rod may be changed to allow the withdrawn-untrippable control rod to be the single highest worth control rod. The requirements of LCO 3.9.4, "Control Rod Position Indication" (and therefore LCO 3.9.1 and LCO 3.9.2) can continue to be met even when the control rod position indication probe is disconnected to allow de-coupling, provided the withdrawn control rod does not erroneously indicate "full-in." However, in the event

(continued)

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BASES

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LCO
(continued)

the control rod does indicate "full-in" (either due to component malfunction or intentional jumpering to cause a "full-in" indication), the function of the inoperable one-rod-out interlock (LCO 3.9.2) is adequately maintained by requiring all other control rods to be inserted and a control rod withdrawal block initiated. This Special Operations LCO requirement that no other CORE ALTERATIONS are in progress adequately compensates for the inoperable all rods in permissive for the refueling equipment interlocks (LCO 3.9.1).

APPLICABILITY

Operation in MODE 5 is controlled by existing LCOs. The allowance to comply with this Special Operations LCO in lieu of the ACTIONS of LCO 3.3.1.1, LCO 3.3.8.2, LCO 3.9.1, LCO 3.9.2, LCO 3.9.4, and LCO 3.9.5 is appropriately controlled with the additional administrative controls required by this Special Operations LCO, which reduce the potential for reactivity excursions.

ACTIONS

A.1, A.2.1, and A.2.2

If one or more of the requirements of this Special Operations LCO are not met, the immediate implementation of these Required Actions restores operation consistent with the normal requirements for failure to meet LCO 3.3.1.1, LCO 3.9.1, LCO 3.9.2, LCO 3.9.4, and LCO 3.9.5 (i.e., all control rods inserted) or with the allowances of this Special Operations LCO. The Completion Times for Required Action A.1, Required Action A.2.1, and Required Action A.2.2 are intended to require that these Required Actions be implemented in a very short time and carried through in an expeditious manner to either initiate action to restore the CRD and insert its control rod, or initiate action to restore compliance with this Special Operations LCO. Actions must continue until either Required Action A.2.1 or Required Action A.2.2 is satisfied.

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.10.5.1, SR 3.10.5.2, SR 3.10.5.3, SR 3.10.5.4,
and SR 3.10.5.5

Verification that all the control rods, other than the control rod withdrawn for the removal of the associated CRD, are fully inserted is required to ensure the SDM is within limits. Verification that the local five by five array of control rods, other than the control rod withdrawn for removal of the associated CRD, is inserted and disarmed, while the scram function for the withdrawn rod is not available, is required to ensure that the possibility of criticality remains precluded. The control rods can be hydraulically disarmed by closing the drive water and exhaust water isolation valves. The control rods can be electrically disarmed by disconnecting power from all four directional control valve solenoids. The Surveillance for LCO 3.1.1, which is made applicable by this Special Operations LCO, is required in order to establish that this Special Operations LCO is being met. Verification that a control rod withdrawal block has been inserted and that no other CORE ALTERATIONS are being made is required to ensure the assumptions of the safety analysis are satisfied under conditions when position indication instrumentation is inoperable for the withdrawn control rod.

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 control rod removal and hardwire interlock to block an additional control rod withdrawal.

REFERENCES

1. UFSAR, Section 14.5.4.3
 2. UFSAR, Section 14.5.4.4.
 3. 10 CFR 50.36(c)(2)(ii).
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JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.6

Multiple Control Rod Withdrawal Refueling

**MARKUP OF CURRENT TECHNICAL SPECIFICATIONS
(CTS)**

DISCUSSION OF CHANGES (DOCs) TO THE CTS

**NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)
FOR LESS RESTRICTIVE CHANGES**

MARKUP OF NUREG-1433, REVISION 1, SPECIFICATION

**JUSTIFICATION FOR DIFFERENCES (JFDs) FROM
NUREG-1433, REVISION 1**

MARKUP OF NUREG-1433, REVISION 1, BASES

**JUSTIFICATION FOR DIFFERENCES (JFDs) FROM
NUREG-1433, REVISION 1, BASES**

**RETYPED PROPOSED IMPROVED TECHNICAL
SPECIFICATIONS (ITS) AND BASES**

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.10.6

Multiple Control Rod Withdrawal Refueling

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

(A1)

3.10.6 Multiple Control Rod Withdrawal - Refueling

(A1)
JAFNPP

3.10 (cont'd)

- 3. The fuel grapple hoist load switch shall be set at less than or equal to 650 lbs.
- 4. If the frame-mounted auxiliary hoist, the mono-rail-mounted auxiliary hoist, or the service platform hoist is to be used for handling fuel with the head off the reactor vessel, the hoist load switch on the hoist to be used shall be set at less than or equal to 400 lbs.

see ITS: 3.9.1

5. Any number of control rods may be withdrawn or removed from the reactor core provided:

[LCO 3.10.6]

~~a. The reactor mode switch is locked in the "Refuel" position; and~~

add Applicability (A6)

b. The fuel assemblies situated in the control cell of the control rod to be withdrawn have been removed; and

[LCO 3.10.6.a]

~~c. Refueling interlocks associated with all control cells containing fuel are operable, Refueling interlocks associated with a specific control rod may be bypassed after the fuel assemblies in the control cell have been removed; and~~

[LCO 3.10.6] [LCO 3.10.6.a]

~~d. Fuel on-loading operations shall be suspended until Specification 3.10.A.2 is satisfied.~~

[LCO 3.10.6.c]

add SRs 3.10.6.2 3.10.6.3 (M2)

add LCO 3.10.6.b (A4)

add ACTION A (A2)

(A3)

AT

3.10 (cont'd)

6. A spiral off-load may be conducted provided:

[LCO 3.10.6]

a. Refueling interlocks are operable for any control cell which contains fuel; and

LI

add Applicability A6

b. Refueling interlocks are bypassed only for those control cells which contain no fuel; and

[LCO 3.10.6, a]

c. Fuel is removed from a control cell before its control rod is withdrawn.

[LCO 3.10.6, b]

7. A spiral onload may be conducted provided:

[LCO 3.10.6]

a. Refueling interlocks may be bypassed only for those control cells which contain no fuel; and

[LCO 3.10.6, c]

b. The spiral onload may commence at either the core center around a "dunking type detector" or, around one of the source range monitors. (Placement of the "dunking type detector" in the core center does not violate the intent of the spiral unloading pattern. Fuel may be loaded into this bundle location when the dunking detector has been removed.); and

Fuel assemblies shall only be loaded in compliance with an approved

LAI

[LCO 3.10.6, b]

c. Before loading fuel into an empty control cell, its control rod is fully inserted, and the refueling interlocks for that control rod are operable; and

[LCO 3.10.6]

d. Refueling interlocks are operable for any control cell which contains fuel.

LI

add ACTION A AZ

AI

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3.10 LIMITING CONDITIONS FOR OPERATION

3.10 CORE ALTERATIONS

Applicability:

Applies to fuel handling and core reactivity limitations.

Objective:

To assure that core reactivity is within the capability of the control rods and to prevent criticality during refueling.

Specification:

A. Refueling Interlocks

1. The Reactor Mode Switch shall be locked in the Refuel position during core alterations and the refueling interlocks shall be operable except as permitted by Specifications 3.10.A.5, 3.10.A.6, 3.10.A.7 and 3.10.D.

2. Fuel shall not be loaded into the reactor core unless all control rods are fully inserted except as permitted by Specification 3.10.A.7.

see ITS 3.9.1

see ITS:3.9.3

Spiral reload sequence

SR 3.10.6.1

Lco 3.10.6.a

[Lco 3.10.6.c]

4.10 SURVEILLANCE REQUIREMENTS

4.10 CORE ALTERATIONS

Applicability:

Applies to the periodic testing of those interlocks and instruments used during refueling and core alterations.

Objective:

To verify the operability of instrumentation and interlocks used in refueling and core alterations.

Specification:

A. Refueling Interlocks

1. Prior to any fuel handling, with the head off the reactor vessel, the refueling interlocks shall be functionally tested. They shall also be tested at weekly intervals thereafter until no longer required and following any repair work associated with the interlocks.

2. Whenever the reactor mode switch is in the Refuel position and refueling interlocks are bypassed, one licensed operator and a member of the reactor analyst department shall verify that the control cell contains no fuel before the corresponding control rod is withdrawn.

see ITS: 3.9.1

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AS

24 hours

MI