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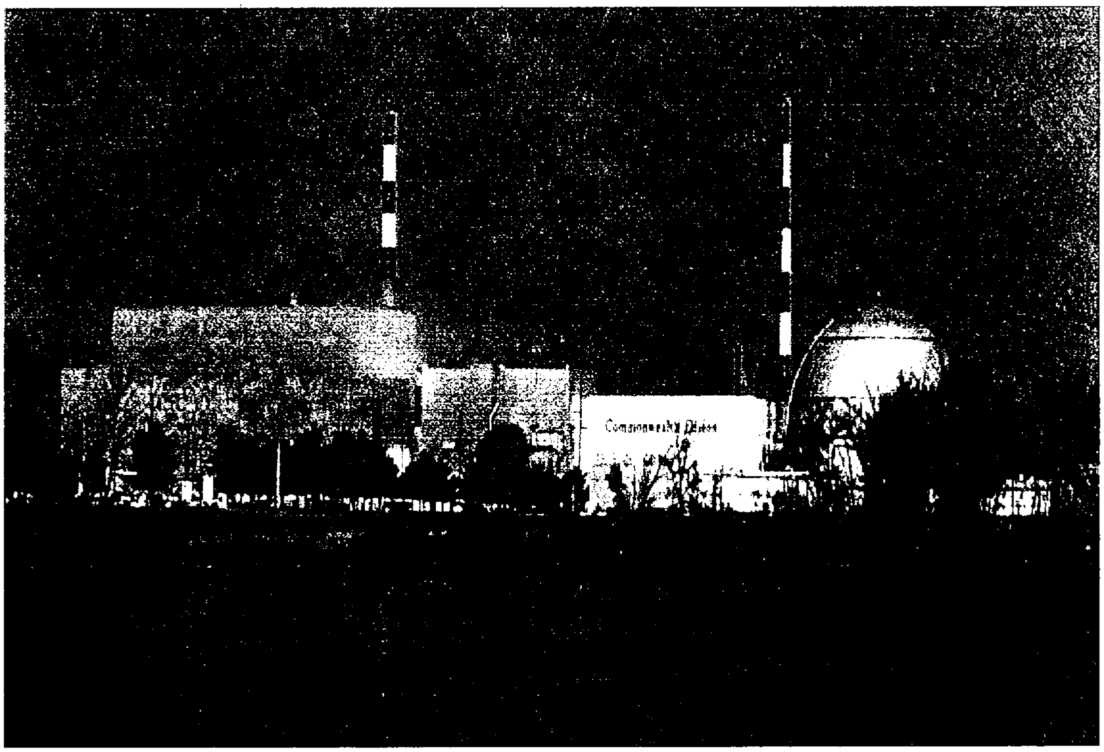

Dresden Station

Volume 10:
Section 3.9 and 3.10

ComEd

3.9 REFUELING OPERATIONS

3.9.1 Refueling Equipment Interlocks

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

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required refueling equipment interlocks inoperable.	A.1 Suspend in-vessel fuel movement with equipment associated with the inoperable interlock(s).	Immediately
	<u>OR</u>	
	A.2.1 Insert a control rod withdrawal block.	Immediately
	<u>AND</u>	
	A.2.2 Verify all control rods are fully inserted in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.1.1	Perform CHANNEL FUNCTIONAL TEST on each of the following required refueling equipment interlock inputs: a. All-rods-in, b. Refuel platform position, c. Refuel platform fuel grapple, fuel loaded, d. Refuel platform fuel grapple fully retracted position, e. Refuel platform frame mounted hoist, fuel loaded, f. Refuel platform monorail mounted hoist, fuel loaded, and g. Service platform hoist, fuel loaded.	7 days

3.9 REFUELING OPERATIONS

3.9.2 Refuel Position One-Rod-Out Interlock

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

APPLICABILITY: MODE 5 with the reactor mode switch in the refuel position and any control rod withdrawn.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

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

(continued)

SURVEILLANCE REQUIREMENTS

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SR 3.9.2.2	------------------NOTE------------------ Not required to be performed until 1 hour after any control rod is withdrawn.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

3.9 REFUELING OPERATIONS

3.9.3 Control Rod Position

LCO 3.9.3 All control rods shall be fully inserted.

APPLICABILITY: When loading fuel assemblies into the core.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more control rods not fully inserted.	A.1 Suspend loading fuel assemblies into the core.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.3.1 Verify all control rods are fully inserted.	12 hours

3.9 REFUELING OPERATIONS

3.9.4 Control Rod Position Indication

LCO 3.9.4 The control rod "full-in" position indication channel for each control rod shall be OPERABLE.

APPLICABILITY: MODE 5.

ACTIONS

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

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

ACTIONS

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

SURVEILLANCE REQUIREMENT

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

3.9 REFUELING OPERATIONS

3.9.5 Control Rod OPERABILITY — Refueling

LCO 3.9.5 Each withdrawn control rod shall be OPERABLE.

APPLICABILITY: MODE 5.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	------------------NOTE------------------ Not required to be performed until 7 days after the control rod is withdrawn. --- Insert each withdrawn control rod at least one notch.	7 days
SR 3.9.5.2	Verify each withdrawn control rod scram accumulator pressure is $\geq$ 940 psig.	7 days

3.9 REFUELING OPERATIONS

3.9.6 Reactor Pressure Vessel (RPV) Water Level — Irradiated Fuel

LCO 3.9.6 RPV water level shall be $\geq$ 23 ft above the top of the RPV flange.

APPLICABILITY: During movement of irradiated fuel assemblies within the RPV.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RPV water level not within limit.	A.1 Suspend movement of irradiated fuel assemblies within the RPV.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.6.1 Verify RPV water level is $\geq$ 23 ft above the top of the RPV flange.	24 hours

3.9 REFUELING OPERATIONS

3.9.7 Reactor Pressure Vessel (RPV) Water Level — New Fuel or Control Rods

LCO 3.9.7 RPV water level shall be $\geq$ 23 ft above the top of irradiated fuel assemblies seated within the RPV.

APPLICABILITY: During movement of new fuel assemblies or handling of control rods within the RPV, when irradiated fuel assemblies are seated within the RPV.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RPV water level not within limit.	A.1 Suspend movement of new fuel assemblies and handling of control rods within the RPV.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.7.1 Verify RPV water level is $\geq$ 23 ft above the top of irradiated fuel assemblies seated within the RPV.	24 hours

3.9 REFUELING OPERATIONS

3.9.8 Shutdown Cooling (SDC) - High Water Level

LCO 3.9.8 One SDC subsystem shall be OPERABLE and in operation.

-------------------------NOTE-------------------------
The required SDC subsystem may be not in operation for up to 2 hours per 8 hour period.

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level $\geq$ 23 ft above the top of the RPV flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required SDC subsystem inoperable.	A.1 Verify an alternate method of decay heat removal is available.	1 hour <u>AND</u> Once per 24 hours thereafter
B. Required Action and associated Completion Time of Condition A not met.	B.1 Suspend loading irradiated fuel assemblies into the RPV. <u>AND</u>	Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.2	Initiate action to restore secondary containment to OPERABLE status.	Immediately
	<u>AND</u>		
	B.3	Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	<u>AND</u>		
	B.4	Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately
C. No SDC subsystem in operation.	C.1	Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation <u>AND</u> Once per 12 hours thereafter
	<u>AND</u>		
	C.2	Monitor reactor coolant temperature.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.8.1	Verify one SDC subsystem is operating.	12 hours

3.9 REFUELING OPERATIONS

3.9.9 Shutdown Cooling (SDC) – Low Water Level

LCO 3.9.9 Two SDC subsystems shall be OPERABLE, and one SDC subsystem shall be in operation.

-------------------------NOTE-------------------------
The required operating shutdown cooling subsystem may be not in operation for up to 2 hours per 8 hour period.

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level < 23 ft above the top of the RPV flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. --------NOTE--------- Separate Condition entry is allowed for each inoperable SDC subsystem. --------------------- One or two required SDC subsystems inoperable.	A.1 Verify an alternate method of decay heat removal is available for the inoperable required SDC subsystem.	1 hour __AND__ Once per 24 hours thereafter
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action to restore secondary containment to OPERABLE status. __AND__	Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.2	Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	AND		
	B.3	Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately
C. No SDC subsystem in operation.	C.1	Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation AND Once per 12 hours thereafter
	AND		
	C.2	Monitor reactor coolant temperature.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.9.1	Verify one SDC subsystem is operating.	12 hours

B 3.9 REFUELING OPERATIONS

B 3.9.1 Refueling Equipment Interlocks

BASES

BACKGROUND

Refueling equipment interlocks restrict the operation of the refueling equipment or the withdrawal of control rods to reinforce unit procedures that prevent the reactor from achieving criticality during refueling. The refueling interlock circuitry senses the conditions of the refueling equipment and the control rods. Depending on the sensed conditions, interlocks are actuated to prevent the operation of the refueling equipment or the withdrawal of control rods.

UFSAR, Section 3.1.2.3.7, requires that one of the two required independent reactivity control systems be capable of holding the reactor core subcritical under cold conditions (Ref. 1). The control rods, when fully inserted, serve as the system capable of maintaining the reactor subcritical in cold conditions during all fuel movement activities and accidents.

Two channels of instrumentation are provided to sense the position of the refueling platform and the full insertion of all control rods. Additionally, inputs are provided for the loading of the refueling platform main hoist fuel grapple, the loading of the refueling platform trolley frame mounted hoist, the loading of the refueling platform monorail mounted hoist, the full retraction of the fuel grapple, and the loading of the service platform hoist. With the reactor mode switch in the shutdown or refuel position, the indicated conditions are combined in logic circuits to determine if all restrictions on refueling equipment operations and control rod insertion are satisfied.

A control rod not at its full-in position interrupts power to the refueling equipment to prevent operating the equipment over the reactor core when loaded with a fuel assembly. Conversely, the refueling equipment located over the core and loaded with fuel inserts a control rod withdrawal block in the Reactor Manual Control System to prevent withdrawing a control rod.

(continued)

BASES

BACKGROUND (continued)

The refueling platform has two mechanical switches that open before the platform or any of its hoists are physically located over the reactor vessel. Each hoist load is sensed by an electronic load cell. The service platform uses relay logic to perform the interlock and load functions. The fuel grapple main hoist load signals input via a signal conditioning unit (SCU) to a programmable logic controller (PLC). The PLC performs the associated interlock and load functions. The monorail and frame-mounted hoist load cells input via SCUs to electronic setpoint modules that perform their associated interlock and load functions. The PLC opens the associated fuel-loaded circuits at a load lighter than the combined weight of a single fuel assembly and inner-most mast section assembly in water. The electronic setpoint modules open the associated fuel-loaded circuits at a load lighter than the weight of a single fuel assembly in water.

The refueling interlocks use these indications to prevent operation of the refueling equipment with fuel loaded over the core whenever any control rod is withdrawn, or to prevent control rod withdrawal whenever fuel loaded refueling equipment is over the core (Ref. 2).

APPLICABLE SAFETY ANALYSES

The refueling interlocks are explicitly assumed in the UFSAR analysis for the control rod removal error during refueling (Ref. 3). This analysis evaluates the consequences of control rod withdrawal during refueling. A prompt reactivity excursion during refueling could potentially result in fuel failure with subsequent release of radioactive material to the environment.

Criticality and, therefore, subsequent prompt reactivity excursions are prevented during the insertion of fuel, provided all control rods are fully inserted during the fuel insertion. The refueling interlocks accomplish this by preventing loading of fuel into the core with any control rod withdrawn or by preventing withdrawal of a rod from the core during fuel loading.

The refueling platform location switches activate at a point outside of the reactor core, such that, with a fuel assembly loaded and a control rod withdrawn, the fuel is not over the core.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)	Refueling equipment interlocks satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).
LCO	To prevent criticality during refueling, the refueling interlocks associated with the reactor mode switch refuel position ensure that fuel assemblies are not loaded into the core with any control rod withdrawn. To prevent these conditions from developing, the all-rods-in, the refueling platform position, the refueling platform fuel grapple fuel loaded, the refueling platform trolley frame mounted hoist fuel loaded, the refueling platform monorail mounted hoist fuel loaded, the refueling platform fuel grapple fully retracted position, and the service platform hoist fuel loaded inputs are required to be OPERABLE when the associated equipment is in use for in-vessel fuel movement. These inputs are combined in logic circuits, which provide refueling equipment or control rod blocks to prevent operations that could result in criticality during refueling operations.
APPLICABILITY	In MODE 5, a prompt reactivity excursion could cause fuel damage and subsequent release of radioactive material to the environment. The refueling equipment interlocks protect against prompt reactivity excursions during MODE 5. The interlocks are required to be OPERABLE during in-vessel fuel movement with refueling equipment associated with the interlocks when the reactor mode switch is in the refuel position. The interlocks are not required when the reactor mode switch is in the shutdown position since a control rod block (LCO 3.3.2.1, "Control Rod Block Instrumentation") ensures control rod withdrawals can not occur simultaneously with in-vessel fuel movements. In MODES 1, 2, 3, and 4, the reactor pressure vessel head is on, and CORE ALTERATIONS are not possible. Therefore, the refueling interlocks are not required to be OPERABLE in these MODES.

(continued)

BASES (continued)

ACTIONS

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

With one or more of the required refueling equipment interlocks inoperable (does not include the one-rod-out interlock addressed in LCO 3.9.2), the unit must be placed in a condition in which the LCO does not apply or is not necessary. This can be performed by ensuring fuel assemblies are not moved in the reactor vessel or by ensuring that the control rods are inserted and cannot be withdrawn. Therefore, Required Action A.1 requires that in-vessel fuel movement with the affected refueling equipment must be immediately suspended. This action ensures that operations are not performed with equipment that would potentially not be blocked from unacceptable operations (e.g., loading fuel into a cell with a control rod withdrawn). Suspension of in-vessel fuel movement shall not preclude completion of movement of a component to a safe position. Alternately, Required Actions A.2.1 and A.2.2 require that a control rod withdrawal block be inserted and that all control rods are subsequently verified to be fully inserted in core cells containing one or more fuel assemblies. Required Action A.2.1 ensures that no control rods can be withdrawn. This action ensures that control rods cannot be inappropriately withdrawn since an electrical or hydraulic block to control rod withdrawal is in place. Required Action A.2.2 is normally performed after placing the rod withdrawal block in effect and provides a verification that all control rods in core cells containing one or more fuel assemblies are fully inserted. Like Required Action A.1, Required Actions A.2.1 and A.2.2 ensure that unacceptable operations are prohibited (e.g., loading fuel into a core cell with the control rod withdrawn).

SURVEILLANCE REQUIREMENTS

SR 3.9.1.1

Performance of a CHANNEL FUNCTIONAL TEST demonstrates each required refueling equipment interlock will function properly when a simulated or actual signal indicative of a required condition is injected into the logic. The CHANNEL FUNCTIONAL TEST may be performed by any series of sequential, overlapping, or total channel steps so that the entire channel is tested.

(continued)

BASES

SURVEILLANCE REQUIREMENTS	<u>SR 3.9.1.1</u> (continued) The 7 day Frequency is based on engineering judgment and is considered adequate in view of other indications of refueling interlocks and their associated input status that are available to unit operations personnel.
REFERENCES	1. UFSAR, Section 3.1.2.3.7. 2. UFSAR, Section 7.7.1.2.2. 3. UFSAR, Section 15.4.1.

B 3.9 REFUELING OPERATIONS

B 3.9.2 Refuel Position One-Rod-Out Interlock

BASES

BACKGROUND

The refuel position one-rod-out interlock restricts the movement of control rods to reinforce unit 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.

UFSAR, Section 3.1.2.3.7, requires that one of the two required independent reactivity control systems be capable of holding the reactor core subcritical under cold conditions (Ref. 1). The control rods serve as the system capable of maintaining the reactor subcritical in cold conditions.

The refuel position one-rod-out interlock prevents the selection of a second control rod for movement when any other control rod is not fully inserted (Ref. 2). It is a logic circuit that has redundant channels. It uses the all-rods-in signal (from the control rod full-in position indicators discussed in LCO 3.9.4, "Control Rod Position Indication") and a rod selection signal (from the Reactor Manual Control System).

This Specification ensures that the performance of the refuel position one-rod-out interlock in the event of a Design Basis Accident meets the assumptions used in the safety analysis of Reference 3.

APPLICABLE SAFETY ANALYSES

The refueling position one-rod-out interlock is explicitly assumed in the UFSAR analysis for the control rod removal error during refueling (Ref. 3). This analysis evaluates the consequences of control rod withdrawal during refueling. A prompt reactivity excursion during refueling could potentially result in fuel failure with subsequent release of radioactive material to the environment.

The refuel position one-rod-out interlock and adequate SDM (LCO 3.1.1, "SHUTDOWN MARGIN (SDM)") prevent criticality by preventing withdrawal of more than one control rod. With

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BASES

APPLICABLE SAFETY ANALYSES (continued)

one control rod withdrawn, the core will remain subcritical, thereby preventing any prompt critical excursion.

The refuel position one-rod-out interlock satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

To prevent criticality during MODE 5, the refuel position one-rod-out interlock ensures no more than one control rod may be withdrawn. Both channels of the refuel position one-rod-out interlock are required to be OPERABLE and the reactor mode switch must be locked in the refuel position to support the OPERABILITY of these channels.

APPLICABILITY

In MODE 5, with the reactor mode switch in the refuel position, the OPERABLE refuel position one-rod-out interlock provides protection against prompt reactivity excursions.

In MODES 1, 2, 3, and 4, the refuel position one-rod-out interlock is not required to be OPERABLE and is bypassed. In MODES 1 and 2, the Reactor Protection System (LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation") and the control rods (LCO 3.1.3, "Control Rod OPERABILITY") provide mitigation of potential reactivity excursions. In MODES 3, 4, and 5, with the reactor mode switch in the shutdown position, a control rod block (LCO 3.3.2.1, "Control Rod Block Instrumentation") ensures all control rods are inserted, thereby preventing criticality during shutdown conditions.

ACTIONS

A.1 and A.2

With the refueling position one-rod-out interlock inoperable, the refueling interlocks may not be capable of preventing more than one control rod from being withdrawn. This condition may lead to criticality.

Control rod withdrawal must be immediately suspended, and action must be immediately initiated to fully insert all insertable control rods in core cells containing one or more fuel assemblies. Action must continue until all such

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

control rods are fully inserted. Control rods in core cells containing no fuel assemblies do not affect the reactivity of the core and, therefore, do not have to be inserted.

SURVEILLANCE REQUIREMENTS

SR 3.9.2.1

Proper functioning of the refueling position one-rod-out interlock requires the reactor mode switch to be in Refuel. During control rod withdrawal in MODE 5, improper positioning of the reactor mode switch could, in some instances, allow improper bypassing of required interlocks. Therefore, this Surveillance imposes an additional level of assurance that the refueling position one-rod-out interlock will be OPERABLE when required. By "locking" the reactor mode switch in the proper position (i.e., removing the reactor mode switch key from the console while the reactor mode switch is positioned in refuel), an additional administrative control is in place to preclude operator errors from resulting in unanalyzed operation.

The Frequency of 12 hours is sufficient in view of other administrative controls utilized during refueling operations to ensure safe operation.

SR 3.9.2.2

Performance of a CHANNEL FUNCTIONAL TEST on each channel demonstrates the associated refuel position one-rod-out interlock will function properly when a simulated or actual signal indicative of a required condition is injected into the logic. The CHANNEL FUNCTIONAL TEST may be performed by any series of sequential, overlapping, or total channel steps so that the entire channel is tested. The 7 day Frequency is considered adequate because of demonstrated circuit reliability, procedural controls on control rod withdrawals, and visual indications available in the control room to alert the operator to control rods not fully inserted. To perform the required testing, the applicable condition must be entered (i.e., a control rod must be

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BASES

SURVEILLANCE REQUIREMENTS	<u>SR 3.9.2.2</u> (continued) withdrawn from its full-in position). Therefore, SR 3.9.2.2 has been modified by a Note that states the CHANNEL FUNCTIONAL TEST is not required to be performed until 1 hour after any control rod is withdrawn.
REFERENCES	1. UFSAR, Section 3.1.2.3.7. 2. UFSAR, Section 7.7.1.2.2. 3. UFSAR, Section 15.4.1.

B 3.9 REFUELING OPERATIONS

B 3.9.3 Control Rod Position

BASES

BACKGROUND

Control rods provide the capability to maintain the reactor subcritical under all conditions and to limit the potential amount and rate of reactivity increase caused by a malfunction in the Control Rod Drive System. During refueling, movement of control rods is limited by the refueling interlocks (LCO 3.9.1, "Refueling Equipment Interlocks," and LCO 3.9.2, "Refuel Position One-Rod-Out Interlock") or the control rod block with the reactor mode switch in the shutdown position (LCO 3.3.2.1, "Control Rod Block Instrumentation").

UFSAR, Section 3.1.2.3.7, requires that one of the two required independent reactivity control systems be capable of holding the reactor core subcritical under cold conditions (Ref. 1). The control rods serve as the system capable of maintaining the reactor subcritical in cold conditions.

The refueling interlocks allow a single control rod to be withdrawn at any time unless fuel is being loaded into the core. To preclude loading fuel assemblies into the core with a control rod withdrawn, all control rods must be fully inserted. This prevents the reactor from achieving criticality during refueling operations.

APPLICABLE SAFETY ANALYSES

Prevention and mitigation of prompt reactivity excursions during refueling are provided by the refueling interlocks (LCO 3.9.1 and LCO 3.9.2), the SDM (LCO 3.1.1, "SHUTDOWN MARGIN (SDM)"), the intermediate range monitor neutron flux scram (LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation"), and the control rod block instrumentation (LCO 3.3.2.1).

The safety analysis for the control rod removal error during refueling in the UFSAR (Ref. 2) assumes the functioning of the refueling interlocks and adequate SDM.

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BASES

APPLICABLE SAFETY ANALYSES (continued)	Thus, prior to fuel reload, all control rods must be fully inserted to minimize the probability of an inadvertent criticality. Control rod position satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).
LCO	All control rods must be fully inserted during applicable refueling conditions to minimize the probability of an inadvertent criticality during refueling.
APPLICABILITY	During MODE 5, loading fuel into core cells with control rods withdrawn may result in inadvertent criticality. Therefore, the control rods must be inserted before loading fuel into a core cell. All control rods must be inserted before loading fuel to ensure that a fuel loading error does not result in loading fuel into a core cell with the control rod withdrawn. In MODES 1, 2, 3, and 4, the reactor pressure vessel head is on, and no fuel loading activities are possible. Therefore, this Specification is not applicable in these MODES.
ACTIONS	A.1 With all control rods not fully inserted during the applicable conditions, an inadvertent criticality could occur that is not analyzed in the UFSAR. All fuel loading operations must be immediately suspended. Suspension of these activities shall not preclude completion of movement of a component to a safe position.
SURVEILLANCE REQUIREMENTS	SR 3.9.3.1 During refueling, to ensure that the reactor remains subcritical, all control rods must be fully inserted prior to and during fuel loading. Periodic checks of the control rod position ensure this condition is maintained.

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BASES

SURVEILLANCE REQUIREMENTS	SR 3.9.3.1 (continued) The 12 hour Frequency takes into consideration the procedural controls on control rod movement during refueling as well as the redundant functions of the refueling interlocks.
REFERENCES	1. UFSAR, Section 3.1.2.3.7. 2. UFSAR, Section 15.4.1.

B 3.9 REFUELING OPERATIONS

B 3.9.4 Control Rod Position Indication

BASES

BACKGROUND

The full-in position indication channel for each control rod provides necessary information to the refueling interlocks to prevent inadvertent criticalities during refueling operations. During refueling, the refueling interlocks (LCO 3.9.1, "Refueling Equipment Interlocks," and LCO 3.9.2, "Refuel Position One-Rod-Out Interlock") use the full-in position indication channel to limit the operation of the refueling equipment and the movement of the control rods. Two full-in position indication switches (S51 and S52) provide input to the all-rods-in logic for each control rod. Switch S51 provides full core display beyond full-in (scram) position indication (green dashes - no readout) and switch S52 provides full core display normal green full-in position indication. Switch S52 is set slightly beyond switch S00, which provides the digital "00" full-in position readout (switch S00 does not provide input to the all-rods-in logic and is not considered a full-in channel). When switch S52 is actuated, the color of the full core display "00" readout is changed from amber to green, indicating the control rod is full-in and latched. Switches S51 and S52 are wired in parallel, such that, if either switch indicates full-in, the all-rods-in logic will receive a full-in signal for that control rod. Therefore, each control rod is considered to have only one "full-in" position indication channel. The absence of the full-in position indication channel signal for any control rod removes the all-rods-in permissive for the refueling equipment interlocks and prevents fuel loading. Also, this condition causes the refuel position one-rod-out interlock to not allow the selection of any other control rod. The all-rods-in logic provides two signals, one to each of the two Reactor Manual Control System rod block circuits.

UFSAR, Section 3.1.2.3.7, requires that one of the two required independent reactivity control systems be capable of holding the reactor core subcritical under cold conditions (Ref. 1). The control rods serve as the system capable of maintaining the reactor subcritical in cold conditions.

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BASES (continued)

APPLICABLE SAFETY ANALYSES	Prevention and mitigation of prompt reactivity excursions during refueling are provided by the refueling interlocks (LCO 3.9.1 and LCO 3.9.2), the SDM (LCO 3.1.1, "SHUTDOWN MARGIN (SDM)"), the intermediate range monitor neutron flux scram (LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation"), and the control rod block instrumentation (LCO 3.3.2.1, "Control Rod Block Instrumentation"). The safety analysis for the control rod removal error during refueling (Ref. 2) assumes the functioning of the refueling interlocks and adequate SDM. The full-in position indication channel is required to be OPERABLE so that the refueling interlocks can ensure that fuel cannot be loaded with any control rod withdrawn and that no more than one control rod can be withdrawn at a time. Control rod position indication satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).
LCO	The control rod full-in position indication channel for each control rod must be OPERABLE to provide the required input to the refueling interlocks. A channel is OPERABLE if it provides correct position indication to the refueling equipment interlock all-rods-in logic (LCO 3.9.1) and the refuel position one-rod-out interlock logic (LCO 3.9.2).
APPLICABILITY	During MODE 5, the control rods must have OPERABLE full-in position indication channels to ensure the applicable refueling interlocks will be OPERABLE. In MODES 1 and 2, requirements for control rod position are specified in LCO 3.1.3, "Control Rod OPERABILITY." In MODES 3 and 4, with the reactor mode switch in the shutdown position, a control rod block (LCO 3.3.2.1) ensures all control rods are inserted, thereby preventing criticality during shutdown conditions.

(continued)

BASES (continued)

ACTIONS

A Note has been provided to modify the ACTIONS related to control rod position indication channels. 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 inoperable control rod position indication channels provide appropriate compensatory measures for separate inoperable channels. As such, this Note has been provided, which allows separate Condition entry for each inoperable control rod position indication channel.

A.1.1, A.1.2, A.1.3, A.2.1 and A.2.2

With one or more full-in position indication channels inoperable, compensating actions must be taken to protect against potential reactivity excursions from fuel assembly insertions or control rod withdrawals. This may be accomplished by immediately suspending in-vessel fuel movement and control rod withdrawal, and immediately initiating action to fully insert all insertable control rods in core cells containing one or more fuel assemblies. Actions must continue until all insertable control rods in core cells containing one or more fuel assemblies are fully inserted. Control rods in core cells containing no fuel assemblies do not affect the reactivity of the core and, therefore, do not have to be inserted. Suspension of in-vessel fuel movements and control rod withdrawal shall not preclude moving a component to a safe position.

Alternatively, actions must be immediately initiated to fully insert the control rod(s) associated with the inoperable full-in position indicator(s) and disarm (electrically or hydraulically) the drive(s) to ensure that the control rod is not withdrawn. A control rod can be hydraulically disarmed by closing the drive water and exhaust water isolation valves. A control rod can be electrically disarmed by disconnecting power from all four directional control valve solenoids. Actions must continue

(continued)

BASES

ACTIONS

A.1.1, A.1.2, A.1.3, A.2.1 and A.2.2 (continued)

until all associated control rods are fully inserted and drives are disarmed. Under these conditions (control rod fully inserted and disarmed), an inoperable full-in channel may be bypassed to allow refueling operations to proceed. An alternate method must be used to ensure the control rod is fully inserted (e.g., use the "00" notch position indication).

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1

The full-in position indication channels provide input to the one-rod-out interlock and other refueling interlocks that require an all-rods-in permissive. The interlocks are actuated when the full-in position indication for any control rod is not present, since this indicates that all rods are not fully inserted. Therefore, testing of the full-in position indication channels is performed to ensure that when a control rod is withdrawn, the full-in position indication is not present. This is performed by verifying the absence of full-in position indication (green dashes or green "00") at the full core display digital display module, when the control rod is not full-in. The full-in position indication channel is considered inoperable even with the control rod fully inserted, if it would continue to indicate full-in with the control rod withdrawn. Performing the SR each time a control rod is withdrawn from the full-in position is considered adequate because of the procedural controls on control rod withdrawals and the visual indications available in the control room to alert the operator to control rods not fully inserted.

REFERENCES

1. UFSAR, Section 3.1.2.3.7.

2. UFSAR, Section 15.4.1.

B 3.9 REFUELING OPERATIONS

B 3.9.5 Control Rod OPERABILITY – Refueling

BASES

BACKGROUND

Control rods are components of the Control Rod Drive (CRD) System, the primary reactivity control system for the reactor. In conjunction with the Reactor Protection System, the CRD System provides the means for the reliable control of reactivity changes during refueling operation. In addition, the control rods provide the capability to maintain the reactor subcritical under all conditions and to limit the potential amount and rate of reactivity increase caused by a malfunction in the CRD System.

UFSAR, Section 3.1.2.3.7, requires that one of the two required independent reactivity control systems be capable of holding the reactor core subcritical under cold conditions (Ref. 1). The CRD System is the system capable of maintaining the reactor subcritical in cold conditions.

APPLICABLE SAFETY ANALYSES

Prevention and mitigation of prompt reactivity excursions during refueling are provided by refueling interlocks (LCO 3.9.1, "Refueling Equipment Interlocks," and LCO 3.9.2, "Refuel Position One Rod-Out Interlock"), the SDM (LCO 3.1.1, SHUTDOWN MARGIN (SDM)"), the intermediate range monitor neutron flux scram (LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation"), and the control rod block instrumentation (LCO 3.3.2.1, "Control Rod Block Instrumentation").

The safety analysis for the control rod removal error during refueling (Ref. 2) evaluates the consequences of control rod withdrawal during refueling and also fuel assembly insertion with a control rod withdrawn. A prompt reactivity excursion during refueling could potentially result in fuel failure with subsequent release of radioactive material to the environment. Control rod scram provides protection should a prompt reactivity excursion occur.

Control rod OPERABILITY during refueling satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

(continued)

BASES (continued)

LCO	Each withdrawn control rod must be OPERABLE. The withdrawn control rod is considered OPERABLE if the scram accumulator pressure is $\geq$ 940 psig and the control rod is capable of being automatically inserted upon receipt of a scram signal. Inserted control rods have already completed their reactivity control function, and therefore are not required to be OPERABLE.
APPLICABILITY	During MODE 5, withdrawn control rods must be OPERABLE to ensure that when a scram occurs the control rods will insert and provide the required negative reactivity to maintain the reactor subcritical. For MODES 1 and 2, control rod requirements are found in LCO 3.1.2, "Reactivity Anomalies," LCO 3.1.3, "Control Rod OPERABILITY," LCO 3.1.4, "Control Rod Scram Times," and LCO 3.1.5, "Control Rod Scram Accumulators." During MODES 3 and 4, control rods are not able to be withdrawn since the reactor mode switch is in shutdown and a control rod block is applied. This provides adequate requirements for control rod OPERABILITY during these conditions.
ACTIONS	<u>A.1</u> With one or more withdrawn control rods inoperable, action must be immediately initiated to fully insert the inoperable control rod(s). Inserting the control rod(s) ensures the shutdown and scram capabilities are not adversely affected. Actions must continue until the inoperable control rod(s) is fully inserted.
SURVEILLANCE REQUIREMENTS	<u>SR 3.9.5.1 and SR 3.9.5.2</u> During MODE 5, the OPERABILITY of control rods is primarily required to ensure a withdrawn control rod will automatically insert if a signal requiring a reactor shutdown occurs. Because no explicit analysis exists for automatic shutdown during refueling, the shutdown function is satisfied if the withdrawn control rod is capable of automatic insertion and the associated CRD scram accumulator pressure is $\geq$ 940 psig.

(continued)

BASES

SURVEILLANCE REQUIREMENTS	SR 3.9.5.1 and SR 3.9.5.2 (continued) The 7 day Frequency takes into consideration equipment reliability, procedural controls over the scram accumulators, and control room alarms and indicating lights that indicate low accumulator charge pressures. SR 3.9.5.1 is modified by a Note that allows 7 days after withdrawal of the control rod to perform the Surveillance. This acknowledges that the control rod must first be withdrawn before performance of the Surveillance, and therefore avoids potential conflicts with SR 3.0.1.
REFERENCES	1. UFSAR, Section 3.1.2.3.7. 2. UFSAR, Section 15.4.1.

B 3.9 REFUELING OPERATIONS

B 3.9.6 Reactor Pressure Vessel (RPV) Water Level — Irradiated Fuel

BASES

BACKGROUND

The movement of irradiated fuel assemblies within the RPV requires a minimum water level of 23 ft above the top of the RPV flange. During refueling, this maintains a sufficient water level in the reactor vessel cavity and spent fuel pool. Sufficient water is necessary to retain iodine fission product activity in the water in the event of a fuel handling accident (Refs. 1 and 2). Sufficient iodine activity would be retained to limit offsite doses from the accident to ≤ 25% of 10 CFR 100 limits, as provided by the guidance of Reference 3.

APPLICABLE SAFETY ANALYSES

During movement of irradiated fuel assemblies, the water level in the RPV is an initial condition design parameter in the analysis of a fuel handling accident in containment postulated by Regulatory Guide 1.25 (Ref. 1). A minimum water level of 23 ft (Regulatory Position C.1.c of Ref. 1) allows a decontamination factor of 100 (Regulatory Position C.1.g of Ref. 1) to be used in the accident analysis for iodine. This relates to the assumption that 99% of the total iodine released from the pellet to cladding gap of all the dropped fuel assembly rods is retained by the water. The fuel pellet to cladding gap is assumed to contain 10% of the total fuel rod iodine inventory (Ref. 1).

Analysis of the fuel handling accident inside containment is described in Reference 2. With a minimum water level of 23 ft and a minimum decay time of 24 hours prior to fuel handling, the analysis and test programs demonstrate that the iodine release due to a postulated fuel handling accident is adequately captured by the water and that offsite doses are maintained within allowable limits (Ref. 4). While the worst case assumptions include the dropping of the irradiated fuel assembly being handled onto the reactor core, the possibility exists of the dropped assembly striking the RPV flange and releasing fission products. Therefore, the minimum depth for water coverage to ensure acceptable radiological consequences is specified from the RPV flange. Since the worst case event results in

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)	failed fuel assemblies seated in the core, as well as the dropped assembly, dropping an assembly on the RPV flange will result in reduced releases of fission gases. RPV water level satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).
LCO	A minimum water level of 23 ft above the top of the RPV flange is required to ensure that the radiological consequences of a postulated fuel handling accident are within acceptable limits, as provided by the guidance of Reference 3.
APPLICABILITY	LCO 3.9.6 is applicable when moving irradiated fuel assemblies within the RPV. The LCO minimizes the possibility of a fuel handling accident in containment that is beyond the assumptions of the safety analysis. If irradiated fuel is not present within the RPV, there can be no significant radioactivity release as a result of a postulated fuel handling accident. Requirements for handling of new fuel assemblies or control rods (where water depth to the RPV flange is not of concern) are covered by LCO 3.9.7, "RPV Water Level - New Fuel or Control Rods." Requirements for fuel handling accidents in the spent fuel storage pool are covered by LCO 3.7.8, "Spent Fuel Storage Pool Water Level."
ACTIONS	<u>A.1</u> If the water level is < 23 ft above the top of the RPV flange, all operations involving movement of irradiated fuel assemblies within the RPV shall be suspended immediately to ensure that a fuel handling accident cannot occur. The suspension of irradiated fuel movement shall not preclude completion of movement of a component to a safe position.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.9.6.1

Verification of a minimum water level of 23 ft above the top of the RPV flange ensures that the design basis for the postulated fuel handling accident analysis during refueling operations is met. Water at the required level limits the consequences of damaged fuel rods, which are postulated to result from a fuel handling accident in containment (Ref. 2).

The Frequency of 24 hours is based on engineering judgment and is considered adequate in view of the large volume of water and the normal procedural controls on valve positions, which make significant unplanned level changes unlikely.

REFERENCES

1. Regulatory Guide 1.25, March 23, 1972.
2. UFSAR, Section 15.7.3.
3. NUREG-0800, Section 15.7.4.
4. 10 CFR 100.11.

B 3.9 REFUELING OPERATIONS

B 3.9.7 Reactor Pressure Vessel (RPV) Water Level — New Fuel or Control Rods

BASES

BACKGROUND

The movement of new fuel assemblies or handling of control rods within the RPV when fuel assemblies seated within the reactor vessel are irradiated requires a minimum water level of 23 ft above the top of irradiated fuel assemblies seated within the RPV. During refueling, this maintains a sufficient water level above the irradiated fuel. Sufficient water is necessary to retain iodine fission product activity in the water in the event of a fuel handling accident (Refs. 1 and 2). Sufficient iodine activity would be retained to limit offsite doses from the accident to ≤ 25% of 10 CFR 100 limits, as provided by the guidance of Reference 3.

APPLICABLE SAFETY ANALYSES

During movement of new fuel assemblies or handling of control rods over irradiated fuel assemblies, the water level in the RPV is an initial condition design parameter in the analysis of a fuel handling accident in containment postulated by Regulatory Guide 1.25 (Ref. 1). A minimum water level of 23 ft (Regulatory Position C.1.c of Ref. 1) allows a decontamination factor of 100 (Regulatory Position C.1.g of Ref. 1) to be used in the accident analysis for iodine. This relates to the assumption that 99% of the total iodine released from the pellet to cladding gap of all the dropped fuel assembly rods is retained by the water. The fuel pellet to cladding gap is assumed to contain 10% of the total fuel rod iodine inventory (Ref. 1).

Analysis of the fuel handling accident inside containment is described in Reference 2. With a minimum water level of 23 ft and a minimum decay time of 24 hours prior to fuel handling, the analysis and test programs demonstrate that the iodine release due to a postulated fuel handling accident is adequately captured by the water and that offsite doses are maintained within allowable limits (Ref. 4). The related assumptions include the worst case dropping of an irradiated fuel assembly onto the reactor core loaded with irradiated fuel assemblies.

RPV water level satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

(continued)

BASES (continued)

LCO	A minimum water level of 23 ft above the top of irradiated fuel assemblies seated within the RPV is required to ensure that the radiological consequences of a postulated fuel handling accident are within acceptable limits, as provided by the guidance of Reference 3.
APPLICABILITY	LCO 3.9.7 is applicable when moving new fuel assemblies or handling control rods (i.e., movement with other than the normal control rod drive) when irradiated fuel assemblies are seated within the RPV. The LCO minimizes the possibility of a fuel handling accident in containment that is beyond the assumptions of the safety analysis. If irradiated fuel is not present within the RPV, there can be no significant radioactivity release as a result of a postulated fuel handling accident. Requirements for fuel handling accidents in the spent fuel storage pool are covered by LCO 3.7.8, "Spent Fuel Storage Pool Water Level." Requirements for handling irradiated fuel over the RPV are covered by LCO 3.9.6, "Reactor Pressure Vessel (RPV) Water Level – Irradiated Fuel."
ACTIONS	A.1 If the water level is < 23 ft above the top of irradiated fuel assemblies seated within the RPV, all operations involving movement of new fuel assemblies and handling of control rods within the RPV shall be suspended immediately to ensure that a fuel handling accident cannot occur. The suspension of fuel movement and control rod handling shall not preclude completion of movement of a component to a safe position.
SURVEILLANCE REQUIREMENTS	SR 3.9.7.1 Verification of a minimum water level of 23 ft above the top of irradiated fuel assemblies seated within the RPV ensures that the design basis for the postulated fuel handling accident analysis during refueling operations is met. Water at the required level limits the consequences of damaged fuel rods, which are postulated to result from a fuel handling accident in containment (Ref. 2).

(continued)

BASES

SURVEILLANCE REQUIREMENTS	<u>SR 3.9.7.1</u> (continued) The Frequency of 24 hours is based on engineering judgment and is considered adequate in view of the large volume of water and the normal procedural controls on valve positions, which make significant unplanned level changes unlikely.
REFERENCES	1. Regulatory Guide 1.25, March 23, 1972. 2. UFSAR, Section 15.7.3. 3. NUREG-0800, Section 15.7.4. 4. 10 CFR 100.11.

B 3.9 REFUELING OPERATIONS

B 3.9.8 Shutdown Cooling (SDC) — High Water Level

BASES

BACKGROUND

The purpose of the SDC System in MODE 5 is to remove decay heat and sensible heat from the reactor coolant, as described by UFSAR, Section 5.4.7 (Ref. 1). Two of the three shutdown cooling loops of the SDC System can provide the required decay heat removal. Each loop consists of a motor driven pump, a heat exchanger, and associated piping and valves. The loops can take suction from either recirculation loop. Each pump discharges the reactor coolant, after it has been cooled by circulation through the respective heat exchanger, to the reactor via either low pressure coolant injection path and the associated recirculation loop. The SDC heat exchangers transfer heat to the Service Water System via the Reactor Building Closed Cooling Water (RBCCW) System. The SDC mode is manually controlled.

In addition to the SDC subsystems, the volume of water above the reactor pressure vessel (RPV) flange provides a heat sink for decay heat removal.

APPLICABLE SAFETY ANALYSES

With the unit in MODE 5, the SDC System is not required to mitigate any events or accidents evaluated in the safety analyses. The SDC System is required for removing decay heat to maintain the temperature of the reactor coolant.

The SDC System satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii).

LCO

Only one SDC subsystem is required to be OPERABLE and in operation in MODE 5 with irradiated fuel in the RPV and the water level ≥ 23 ft above the RPV flange. Only one subsystem is required to be OPERABLE because the volume of water above the RPV flange provides backup decay heat removal capability.

(continued)

BASES

LCO (continued)	An OPERABLE SDC subsystem consists of a SDC pump, a heat exchanger, valves, piping, instruments, and controls to ensure an OPERABLE flow path. In addition, the necessary portions of the RBCCW System must be capable of providing cooling water to the SDC heat exchanger, the SDC pump seal cooler. Additionally, the SDC subsystem is considered OPERABLE if it can be manually aligned (remote or local) in the shutdown cooling mode for removal of decay heat. Operation (either continuous or intermittent) of one subsystem can maintain and reduce the reactor coolant temperature as required. However, to ensure adequate core flow to allow for accurate average reactor coolant temperature monitoring, nearly continuous operation is required. A Note is provided to allow a 2 hour exception for the operating subsystem to not be in operation every 8 hours. This is permitted because the core heat generation can be low enough and the heatup rate slow enough to allow some changes to the SDC subsystem or other operations requiring SDC flow interruption.
APPLICABILITY	One SDC subsystem must be OPERABLE and in operation in MODE 5, with irradiated fuel in the RPV and with the water level $\geq$ 23 feet above the top of the RPV flange, to provide decay heat removal. SDC subsystem requirements in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System (RCS). SDC subsystem requirements in MODE 5 with irradiated fuel in the RPV and with the water level < 23 ft above the RPV flange are given in LCO 3.9.9, "Shutdown Cooling (SDC) — Low Water Level."
ACTIONS	<u>A.1</u> With no SDC subsystem OPERABLE, an alternate method of decay heat removal must be provided within 1 hour. In this condition, the volume of water above the RPV flange provides adequate capability to remove decay heat from the reactor core. However, the overall reliability is reduced because loss of water level could result in reduced decay heat removal capability. The 1 hour Completion Time is based on decay heat removal function and the probability of a loss of the available decay heat removal capabilities. Furthermore,

(continued)

BASES

ACTIONS

A.1 (continued)

verification of the functional availability of the alternate method must be reconfirmed every 24 hours thereafter. This will ensure continued heat removal capability.

Alternate decay heat removal methods are available to the operators for review and preplanning in the unit operating procedures. The required cooling capacity of the alternate method should be ensured by verifying (by calculation or demonstration) its capability to maintain or reduce temperature. For example, this may include the use of the Fuel Pool Cooling or Reactor Water Cleanup System operating with the regenerative heat exchanger bypassed or in combination with the Control Rod Drive System or Condensate/Feed System. The method used to remove the decay heat should be the most prudent choice based on unit conditions.

B.1, B.2, B.3, and B.4

If no shutdown cooling subsystem is OPERABLE and an alternate method of decay heat removal is not available in accordance with Required Action A.1, actions shall be taken immediately to suspend operations involving an increase in reactor decay heat load by suspending loading of irradiated fuel assemblies into the RPV.

Additional actions are required to minimize any potential fission product release to the environment. This includes ensuring secondary containment is OPERABLE; one standby gas treatment subsystem is OPERABLE; and secondary containment isolation capability is available in each associated penetration flow path not isolated that is assumed to be isolated to mitigate radioactive releases (i.e., one secondary containment isolation valve and associated instrumentation are OPERABLE or other acceptable administrative controls to assure isolation capability. These administrative controls consist of stationing a dedicated operator, who is in continuous communication with the control room, at the controls of the isolation device. In this way, the penetration can be rapidly isolated when a need for secondary containment isolation is indicated). This may be performed as an administrative check, by

(continued)

BASES

ACTIONS

B.1, B.2, B.3, and B.4 (continued)

examining logs or other information to determine whether the components are out of service for maintenance or other reasons. It is not necessary to perform the Surveillances needed to demonstrate the OPERABILITY of the components. If, however, any required component is inoperable, then it must be restored to OPERABLE status. In this case, a surveillance may need to be performed to restore the component to OPERABLE status. Actions must continue until all required components are OPERABLE.

C.1 and C.2

If no SDC subsystem is in operation, an alternate method of coolant circulation is required to be established within 1 hour. The Completion Time is modified such that the 1 hour is applicable separately for each occurrence involving a loss of coolant circulation.

During the period when the reactor coolant is being circulated by an alternate method (other than by the required SDC subsystem), the reactor coolant temperature must be periodically monitored to ensure proper functioning of the alternate method. The once per hour Completion Time is deemed appropriate.

SURVEILLANCE REQUIREMENTS

SR 3.9.8.1

This Surveillance demonstrates that the required SDC subsystem is in operation and circulating reactor coolant. The required flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability. The Frequency of 12 hours is sufficient in view of other visual and audible indications available to the operator for monitoring the SDC subsystem in the control room.

REFERENCES

1. UFSAR, Section 5.4.7.

B 3.9 REFUELING OPERATIONS

B 3.9.9 Shutdown Cooling (SDC) — Low Water Level

BASES

BACKGROUND	The purpose of the SDC System in MODE 5 is to remove decay heat and sensible heat from the reactor coolant, as described by UFSAR, Section 5.4.7 (Ref. 1). Two of the three shutdown cooling loops of the SDC System can provide the required decay heat removal. Each loop consists of a motor driven pump, a heat exchanger, and associated piping and valves. The loops can take suction from either recirculation loop. Each pump discharges the reactor coolant, after it has been cooled by circulation through the respective heat exchanger, to the reactor via either low pressure coolant injection path and the associated recirculation loop. The SDC heat exchangers transfer heat to the Service Water System via the Reactor Building Closed Cooling Water (RBCCW) System. The SDC mode is manually controlled.
APPLICABLE SAFETY ANALYSES	With the unit in MODE 5, the SDC System is not required to mitigate any events or accidents evaluated in the safety analyses. The SDC System is required for removing decay heat to maintain the temperature of the reactor coolant. The SDC System satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii).
LCO	In MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level < 23 ft above the reactor pressure vessel (RPV) flange two SDC subsystems must be OPERABLE and one SDC subsystem must be in operation. An OPERABLE SDC subsystem consists of a SDC pump, a heat exchanger, valves, piping, instruments, and controls to ensure an OPERABLE flow path. To meet the LCO, one pump in each of the two required loops must be OPERABLE. In addition the necessary portions of the RBCCW System must be capable of providing cooling water to the SDC heat exchanger and the SDC pump seal cooler.

(continued)

BASES

LCO (continued)

Additionally, each SDC subsystem is considered OPERABLE if it can be manually aligned (remote or local) in the shutdown cooling mode for removal of decay heat. Operation (either continuous or intermittent) of one subsystem can maintain and reduce the reactor coolant temperature as required. However, to ensure adequate core flow to allow for accurate average reactor coolant temperature monitoring, nearly continuous operation is required. A Note is provided to allow a 2 hour exception for the operating subsystem to not be in operation every 8 hours. This is permitted because the core heat generation can be low enough and the heatup rate slow enough to allow some changes to the SDC subsystem or other operations requiring SDC flow interruption.

APPLICABILITY

Two SDC subsystems are required to be OPERABLE, and one SDC subsystem must be in operation in MODE 5, with irradiated fuel in the RPV and with the water level < 23 ft above the top of the RPV flange, to provide decay heat removal. SDC subsystem requirements in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System (RCS). SDC subsystem requirements in MODE 5 with irradiated fuel in the RPV and with the water level ≥ 23 ft above the RPV flange are given in LCO 3.9.8, "Shutdown Cooling (SDC) — High Water Level."

ACTIONS

A.1

With one of the two required SDC subsystems inoperable, the remaining subsystem is capable of providing the required decay heat removal. However, the overall reliability is reduced. Therefore, an alternate method of decay heat removal must be provided. With both required SDC subsystems inoperable, an alternate method of decay heat removal must be provided in addition to that provided for the initial SDC subsystem inoperability. This re-establishes backup decay heat removal capabilities, similar to the requirements of the LCO. The 1 hour Completion Time is based on the decay heat removal function and the probability of a loss of the available decay heat removal capabilities. Furthermore, verification of the functional availability of the alternate method(s) must be reconfirmed every 24 hours thereafter. This will ensure continued heat removal capability.

(continued)

BASES

ACTIONS

A.1 (continued)

Alternate decay heat removal methods are available to the operators for review and preplanning in the unit operating procedures. The required cooling capacity of the alternate method should be ensured by verifying (by calculation or demonstration) its capability to maintain or reduce temperature. For example, this may include the use of the Fuel Pool Cooling or Reactor Water Cleanup System operating with the regenerative heat exchanger bypassed or in combination with the Control Rod Drive System or Condensate/Feed System. The method used to remove decay heat should be the most prudent choice based on unit conditions.

Condition A is modified by a Note allowing separate Condition entry for each inoperable SDC subsystem. This is acceptable since the Required Actions for this Condition provide appropriate compensatory actions for each inoperable SDC subsystem. Complying with the Required Actions allow for continued operation. A subsequent inoperable subsystem is governed by subsequent entry into the Condition and application of the Required Actions

B.1, B.2, and B.3

With the required decay heat removal subsystem(s) inoperable and the required alternate method(s) of decay heat removal not available in accordance with Required Action A.1, additional actions are required to minimize any potential fission product release to the environment. This includes ensuring secondary containment is OPERABLE; one standby gas treatment subsystem is OPERABLE; and secondary containment isolation capability is available in each associated penetration flow path not isolated that is assumed to be isolated to mitigate radioactive releases (i.e., one secondary containment isolation valve and associated instrumentation are OPERABLE or other acceptable administrative controls to assure isolation capability. These administrative controls consist of stationing a dedicated operator, who is in continuous communication with the control room, at the controls of the isolation device. In this way, the penetration can be rapidly isolated when a

(continued)

BASES

ACTIONS

B.1, B.2, and B.3 (continued)

need for secondary containment isolation is indicated). This may be performed as an administrative check, by examining logs or other information to determine whether the components are out of service for maintenance or other reasons. It is not necessary to perform the Surveillances needed to demonstrate the OPERABILITY of the components. If, however, any required component is inoperable, then it must be restored to OPERABLE status. In this case, the surveillance may need to be performed to restore the component to OPERABLE status. Actions must continue until all required components are OPERABLE.

C.1 and C.2

If no SDC subsystem is in operation, an alternate method of coolant circulation is required to be established within 1 hour. The Completion Time is modified such that the 1 hour is applicable separately for each occurrence involving a loss of coolant circulation.

During the period when the reactor coolant is being circulated by an alternate method (other than by the required SDC subsystem), the reactor coolant temperature must be periodically monitored to ensure proper functioning of the alternate method. The once per hour Completion Time is deemed appropriate.

SURVEILLANCE REQUIREMENTS

SR 3.9.9.1

This Surveillance demonstrates that one SDC subsystem is in operation and circulating reactor coolant. The required flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability. The Frequency of 12 hours is sufficient in view of other visual and audible indications available to the operator for monitoring the SDC subsystems in the control room

REFERENCES

1. UFSAR, Section 5.4.7.

A.1

3.10 - LIMITING CONDITIONS FOR OPERATION

A. Reactor Mode Switch

moved to ITS 3.9.2 A.2

The reactor mode switch shall be OPERABLE and locked in the Shutdown or Refuel position. When the reactor mode switch is locked in the Refuel position:

Applicability

1. A control rod shall not be withdrawn unless the Refuel position one-rod-out interlock is OPERABLE.

2. ~~CORE ALTERATION(s)~~ In-vessel fuel movement A.3 shall not be performed using equipment associated with a Refuel position interlock unless at least the following associated Refuel position interlocks are OPERABLE for such equipment.

LCO 3.9.1

SR 3.9.1.1

a. a. All rods in.

b. b. Refuel platform position. A.4

c, e, f c. Refuel platform hoists fuel-loaded.

d d. Fuel grapple position.

g e. Service platform hoist fuel loaded. M.1

APPLICABILITY: A.5

OPERATIONAL MODE(s) 3[(a)], 4[(a)] and 5[(b)(c)]. A.6 moved to ITS 3.10.2 and ITS 3.10.3

A.7

A.8

ACTION:

1. With the reactor mode switch not locked in the Shutdown or Refuel position as specified, suspend CORE ALTERATION(s) and lock the reactor mode switch in the Shutdown or Refuel position. A.2 moved to ITS 3.9.2

4.10 - SURVEILLANCE REQUIREMENTS

A. Reactor Mode Switch

1. The reactor mode switch shall be verified to be locked in the Shutdown or Refuel position as specified: A.2 moved to ITS 3.9.2

a. Within 2 hours prior to:

1. Beginning CORE ALTERATION(s), and

2. Resuming CORE ALTERATION(s) when the reactor mode switch has been unlocked.

b. At least once per 12 hours.

SR 3.9.1.1

2. Each of the required reactor mode switch Refuel position interlocks[(d)] A.6 moved to ITS 3.10.1 shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST ~~within 24 hours prior to the start of and~~ L.1 at least once per 7 days ~~during control rod withdrawal or CORE ALTERATION(s)~~ A.2 moved to ITS 3.9.2, in-vessel fuel movement A.3 as applicable.

3. ~~Each of the required reactor mode switch Refuel position interlocks[(d)] that is affected shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST prior to resuming control rod withdrawal or~~ L.2

A.6 moved to ITS 3.10.2 and ITS 3.10.3

a When the reactor mode switch is in the Refuel position.

A.7

b ~~See Special Test Exceptions 3.12.A and 3.12.B.~~

c ~~The reactor shall be maintained in OPERATIONAL MODE 5 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.~~

A.8

d The reactor mode switch may be placed in the Run or Startup/Hot Standby position to test the switch interlock functions provided that all control rods are verified to remain fully inserted by a second licensed operator or other technically qualified individual.

A.6 moved to ITS 3.10.1

3.10 - LIMITING CONDITIONS FOR OPERATION

2. With the one-rod-out interlock inoperable, lock the reactor mode switch in the Shutdown position. A.2 moved to ITS 3.9.2

ACTION A

3. With any of the above required Refuel position equipment interlocks inoperable, suspend CORE ALTERATION(s) in-vessel fuel movement with equipment associated with the inoperable Refuel position equipment interlock. A.3

add proposed Required Actions A.2.1 and A.2.2 L.3

4.10 - SURVEILLANCE REQUIREMENTS

~~CORE ALTERATION(s), as applicable, following repair, maintenance or replacement of any component that could affect the Refuel position interlock.~~ L.2

DISCUSSION OF CHANGES
ITS: 3.9.1 - REFUELING EQUIPMENT INTERLOCKS

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 The Refuel Position One-Rod-Out Interlock and reactor mode switch requirements of CTS 3/4.10.A have been moved to ITS 3.9.2 in accordance with the BWR ISTS, NUREG-1433, Rev. 1. Any technical changes to the requirements will be addressed in the Discussion of Changes for ITS: 3.9.2.

A.3 CTS 3.10.A is divided into two separate requirements. CTS 3.10.A.1 places requirements on the one-rod-out interlock to be OPERABLE when in Operational MODE 5 (MODE 5) when a control rod is withdrawn. This requirement is rewritten in ITS 3.9.2, where the Applicability addresses the control rod withdrawal (see Discussion of Changes for ITS: 3.9.2.) Second, CTS 3.10.A.2 places restrictions on equipment to be used during CORE ALTERATION(s). This requirement is rewritten in ITS 3.9.1; where the ITS 3.9.1 Applicability addresses the only CORE ALTERATION(s) remaining, i.e., fuel movement (the only other possible CORE ALTERATION(s) involve control rod withdrawal, and they are addressed in ITS 3.9.2 as discussed above). Therefore, this change is considered administrative.

A.4 CTS 3.10.A.2.c requires the refuel platform "hoists" fuel loaded interlocks be Operable. Each actual refuel platform hoist interlock has been listed in the Surveillance Requirement of proposed SR 3.9.1.1. The fuel grapple, frame-mounted hoist, and monorail hoist (proposed SRs 3.9.1.1.c, 3.9.1.1.e, and 3.9.1.1.f, respectively) are the three refuel platform "hoists" installed at Dresden 2 and 3 and described in the UFSAR with fuel loaded interlocks. Therefore, this addition to CTS 3.10.A.2.c is considered administrative only since it provides clarification of the current design.

A.5 The Applicability of CTS 3/4.10.A includes Operational MODE 5. As discussed in Discussion of Change A.3 above, the interlocks of CTS 3.10.A.2 are only required during CORE ALTERATION(s) (in-vessel fuel movements only). Thus, the ITS 3.9.1 Applicability has been changed to specify "during in-vessel fuel movement...", as well as specifying the equipment being used "...with equipment associated with the interlocks...", currently found in CTS 3.10.A.2.

ADMINISTRATIVE

A.5 (cont'd) In addition, this new Applicability is consistent with CTS 3.10.A Action 3, which only requires CORE ALTERATION(s) to be suspended with equipment whose interlocks are inoperable. Thus, this change is considered administrative in nature only, since it is simply ensuring the Actions and Applicability match up.

A.6 The Refuel Position Refueling Equipment Interlock requirements for MODES 3 and 4 (as shown in the Applicability of CTS 3.10.A) have been moved to ITS 3.10.2 and 3.10.3, respectively, in accordance with the BWR ISTS, NUREG-1433, Rev. 1. In addition, the allowance in CTS 3.10.A footnote (d) to place the reactor mode switch in Run or Startup/Hot Standby to test the reactor mode switch interlock functions has been moved to ITS 3.10.1 in accordance with the BWR ISTS, NUREG-1433, Rev. 1. Any technical changes to the requirements will be addressed in the Discussion of Changes for ITS 3.10.1, ITS 3.10.2, and ITS 3.10.3.

A.7 CTS 3.10.A Applicability footnote (b), which provides a cross reference to CTS 3.12.A and 3.12.B, has been deleted. The format of the ITS does not include providing cross references. Proposed LCO 3.0.7 adequately prescribes the use of the Special Operations LCOs without such references. Therefore the existing reference in the CTS 3.10.A Applicability footnote (b) to the Special Test Exceptions of CTS 3.12.A and 3.12.B serves no functional purpose, and its removal is an administrative change.

A.8 CTS 3.10.A Applicability footnote (c) states that the reactor shall be maintained in Operational MODE 5 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed. This equipment is an explicit part of the definition of MODE 5, as defined in CTS Table 1-2 and ITS Table 1.1-1. Therefore, there is no need to duplicate the requirements in ITS 3.9.1, and CTS 3.10.A Applicability footnote (c) has been deleted.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 4.10.A.2 (ITS SR 3.9.1.1) requires testing of the reactor mode switch Refuel position interlocks associated with the equipment listed in CTS 3.10.A.2. The service platform hoist fuel loaded interlock is being added to the list of refueling interlocks since the service platform hoist can be operated over the reactor core during refueling and the design includes a hoist loaded interlock that assures no control rod is withdrawn when fuel is being loaded into the reactor. This proposed change imposes additional requirements for the service platform hoist fuel loaded interlock. As such, this change is considered more restrictive.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

None

"Specific"

L.1 The normal 7 day periodic Surveillance Frequency of CTS 4.10.A.2 (proposed SR 3.9.1.1) for the CHANNEL FUNCTIONAL TEST of the reactor mode switch refuel position interlocks provides adequate assurance of OPERABILITY. As such, the requirement to perform the Surveillance Requirement "within 24 hours prior to the start of" use of the component has been deleted. If the Surveillance has not been performed within the specified interval, use of the component is not allowed since proposed SR 3.0.1 (CTS 4.0.A) requires a Surveillance be met within the specified Frequency while in the applicable MODE or condition. Proposed SR 3.0.1 (CTS 4.0.C) also states that failure to meet the Surveillance constitutes failure to meet the LCO, which would then require the ACTIONS of the LCO to be taken. If this specific Surveillance Requirement is not performed within the specified Frequency prior to entering the applicable condition, then as soon as the applicable condition is entered, this would result in the LCO not being met. The ACTIONS of ITS 3.9.1 require immediate action to be taken to exit the Applicability of the LCO. Therefore, this effectively ensures that the Applicability of the LCO is not entered with the Surveillance not current. Additionally, plant operational experience has shown the normal periodic Surveillance Frequency to be adequate for maintaining OPERABILITY.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.2 CTS 4.10.A.3 requires the affected reactor mode switch refuel position interlocks to be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST before resuming control rod withdrawal or CORE ALTERATION(s) following repair, maintenance, or replacement of any component that could affect the refuel position interlock. Any time the OPERABILITY of a system or component has been affected by repair, maintenance, or replacement of a component, post maintenance testing is required to demonstrate OPERABILITY of the system or component. After restoration of a component that caused a required SR to be failed, proposed SR 3.0.1 (CTS 4.0.A) requires the appropriate SRs (in this case CTS 4.10.A.2, proposed SR 3.9.1.1) to be performed to demonstrate the OPERABILITY of the affected components. Therefore, explicit post maintenance Surveillance Requirements of CTS 4.10.A.3 are not required and have been deleted from the ITS. Entry into the applicable specified condition without performing this post maintenance testing also continues to be precluded except where allowed, as discussed in the Bases for proposed SR 3.0.1.

L.3 CTS 3.10.A Action 3 requires that when a required Refuel position equipment interlock is inoperable, CORE ALTERATION(s) (changed to in-vessel fuel movement by Discussion of Change A.3 above) be suspended with equipment associated with the inoperable Refuel position equipment interlock. New actions have been added, ITS 3.9.1 Required Actions A.2.1 and A.2.2, to allow a control rod block to be inserted and to verify all control rods in core cells containing one or more fuel assemblies in lieu of suspending in-vessel fuel movement. The purpose of the current requirement is to ensure that operations are not performed with equipment that would potentially not be blocked from unacceptable operations (e.g., loading fuel into a cell with a control rod withdrawn or withdrawing a control rod while fuel is being moved in the reactor pressure vessel). The methods that the refueling interlocks use to prevent these occurrences are to block control rod withdrawal when fuel is being moved and to block movement of the refueling platform and hoist when a control rod is withdrawn. The proposed Required Actions will ensure both these occurrences are prevented. ITS 3.9.1 Required Action A.2.1 will ensure a control rod block is inserted. This will prevent a control rod from being withdrawn when fuel is being moved in the reactor pressure vessel. ITS 3.9.1 Required Action A.2.2 will ensure that all control rods in core cells containing one or more fuel assemblies are fully inserted. This will prevent loading fuel into a core cell with the control rod withdrawn. Therefore, since the proposed Required Actions provide equivalent methods for precluding the assumed occurrences, this change is considered acceptable.

RELOCATED SPECIFICATIONS

None

A.1

3.10 - LIMITING CONDITIONS FOR OPERATION

A. Reactor Mode Switch A.2 L.1

~~The reactor mode switch shall be OPERABLE and locked in the Shutdown or Refuel position.~~ When the reactor mode switch is locked in the Refuel position: <covered by SR 3.9.2.1>

Applicability

LCO 3.9.2

1. A control rod shall not be withdrawn unless the Refuel position one-rod-out interlock is OPERABLE.

2. CORE ALTERATION(s) shall not be performed using equipment associated with a Refuel position interlock unless at least the following associated Refuel position interlocks are OPERABLE for such equipment. A.3 moved to ITS 3.9.1

   a. All rods in.
   b. Refuel platform position.
   c. Refuel platform hoists fuel-loaded.
   d. Fuel grapple position.

APPLICABILITY: A.4

OPERATIONAL MODE(s) 3[(a)], 4[(a)] and 5[(b)(c)]. A.5 moved to ITS 3.10.2 and ITS 3.10.3 A.6 A.7

ACTION:

ACTION A

1. With the reactor mode switch not locked in the ~~Shutdown or~~ Refuel position as specified, ~~suspend CORE ALTERATION(s) and lock the reactor mode switch in the Shutdown or Refuel position.~~ L.1 L.2 L.1

4.10 - SURVEILLANCE REQUIREMENTS

A. Reactor Mode Switch

SR 3.9.2.1 1. The reactor mode switch shall be verified to be locked in the ~~Shutdown or~~ Refuel position as specified: L.1

   ~~a. Within 2 hours prior to:~~

      ~~1. Beginning CORE ALTERATION(s), and~~

      ~~2. Resuming CORE ALTERATION(s) when the reactor mode switch has been unlocked.~~ L.3

   add proposed Note to SR 3.9.2.2 L.4

   b. At least once per 12 hours.

SR 3.9.2.2 2. Each of the required reactor mode switch Refuel position interlocks[(d)] shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST ~~within 24 hours prior to the start of and~~ at least once per 7 days during control rod withdrawal or CORE ALTERATION(s), as applicable. A.5 moved to ITS 3.10.1 L.3 A.3 moved to ITS 3.9.1

~~3. Each of the required reactor mode switch Refuel position interlocks[(d)] that is affected shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST prior to resuming control rod withdrawal or~~ L.5

---

a When the reactor mode switch is in the Refuel position. A.5 moved to ITS 3.10.2 and ITS 3.10.3

~~b See Special Test Exceptions 3.12.A and 3.12.B.~~ A.6

~~c The reactor shall be maintained in OPERATIONAL MODE 5 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.~~ A.7

d The reactor mode switch may be placed in the Run or Startup/Hot Standby position to test the switch interlock functions provided that all control rods are verified to remain fully inserted by a second licensed operator or other technically qualified individual. A.5 moved to ITS 3.10.2

A.1

3.10 - LIMITING CONDITIONS FOR OPERATION

ACTION A

2. With the one-rod-out interlock inoperable, ~~lock the reactor mode switch in the Shutdown position~~ L.2

3. With any of the above required Refuel position equipment interlocks inoperable, suspend CORE ALTERATION(s) with equipment associated with the inoperable Refuel position equipment interlock. A.3

moved to ITS 3.9.1

4.10 - SURVEILLANCE REQUIREMENTS

~~CORE ALTERATION(s), as applicable, following repair, maintenance or replacement of any component that could affect the Refuel position interlock.~~ L.5

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 The CTS 3.10.A requirement that the reactor mode switch shall be in the Shutdown or Refuel position is an explicit part of the definition of MODE 5, as defined in CTS Table 1-2 and ITS Table 1.1-1. Therefore, there is no need to duplicate the requirement in ITS 3.9.2, and this CTS 3.10.A requirement has been deleted.

A.3 The Refueling Equipment Interlock requirements of CTS 3/4.10.A have been moved to ITS 3.9.1 in accordance with the BWR ISTS, NUREG-1433, Rev. 1. Any technical changes to the requirements will be addressed in the Discussion of Changes for ITS: 3.9.1.

A.4 CTS 3.10.A is divided into two separate requirements. CTS 3.10.A.1 places requirements on the one-rod-out interlock to be OPERABLE when in Operational MODE 5. It is required to be OPERABLE during control rod withdrawals only (as stated in CTS 3.10.A.1). Therefore, the ITS 3.9.2 Applicability reflects the current requirements for the one-rod-out interlock to be Operable in MODE 5 with the reactor mode switch in the refuel position and any control rod withdrawn, consistent with the BWR ISTS, NUREG-1433, Rev. 1.

A.5 The Refuel Position One-Rod-Out Interlock requirements for MODES 3 and 4 (as shown in the Applicability of CTS 3.10.A) have been moved to ITS 3.10.2 and 3.10.3, respectively, in accordance with the BWR ISTS, NUREG-1433, Rev. 1. In addition, the allowance in CTS footnote (d) to place the reactor mode switch in Run or Startup/Hot Standby to test the reactor mode switch interlock functions, has been moved to ITS 3.10.1, in accordance with the BWR ISTS, NUREG-1433, Rev. 1. Any technical changes to the requirements will be addressed in the Discussion of Changes for ITS: 3.10.1, ITS: 3.10.2, and ITS: 3.10.3.

A.6 CTS 3.10.A Applicability footnote (b), which provides a cross reference to CTS 3.12.A and 3.12.B, has been deleted. The format of the ITS does not include providing cross references. Proposed LCO 3.0.7 adequately prescribes the use of the Special Operations LCOs without such references. Therefore, the existing

ADMINISTRATIVE (continued)

A.6 (cont'd) reference in the CTS 3.9.1 Applicability footnote (b) to the Special Test Exceptions of CTS 3.12.A and 3.12.B serves no functional purpose, and its removal is an administrative change.

A.7 CTS 3.10.A Applicability footnote (c) states that the reactor shall be maintained in Operational MODE 5 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed. The requirement is an explicit part of the definition of MODE 5, as defined in CTS Table 1-2 and ITS Table 1.1-1. Therefore, there is no need to duplicate the requirement in ITS 3.9.2, and CTS 3.10.A Applicability footnote (c) has been deleted.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

None

"Specific"

L.1 CTS 3.10.A requires the reactor mode switch to be "locked" when in the Shutdown position. CTS 3.10.A Action 1 provides Actions for when the mode switch is in the shutdown position and not locked and CTS 4.10.A.1 verifies the mode switch is locked when in the shutdown position. Reactor mode switch OPERABILITY in CTS 3.10.A, including ACTION 1, and CTS 4.10.A.1 is included as part of the OPERABILITY of the one-rod-out interlock required by ITS 3.9.2. Movement of the reactor mode switch from the Shutdown position is adequately controlled by CTS Table 1-2 and ITS Table 1.1-1. Reactor mode switch positions other than Refuel and Shutdown result in the unit entering some other MODE; with the associated Technical Specification compliance requirements of that MODE and of CTS 3.0.A and 3.0.D (proposed LCOs 3.0.1 and 3.0.4). The Shutdown position is not allowed for ITS 3.9.2 since a control rod cannot be withdrawn with the reactor mode switch in Shutdown. Therefore, the requirement to "lock" the mode switch in Shutdown is proposed to be deleted.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.2 With the one-rod-out interlock inoperable, CTS 3.10.A Actions 1 and 2 require CORE ALTERATIONS to be suspended and the reactor mode switch to be locked in Shutdown or Refuel. These Actions have been revised to immediately suspend control rod withdrawal and initiate action to insert all insertable control rods in core cells containing one or more fuel assemblies (ITS 3.9.2 Required Actions A.1 and A.2). These Required Actions compensate for an inoperable one-rod-out interlock and provide adequate protection against potential reactivity excursions. Further, moving the mode switch to the shutdown position would cause an unnecessary pressure transient on the control rod drive system.

L.3 The normal 12 hour periodic Surveillance Frequency of CTS 4.10.A.1.b (proposed SR 3.9.2.1) to verify the reactor mode switch is locked in the refuel position and the normal 7 day periodic Surveillance Frequency of CTS 4.10.A.2 (proposed SR 3.9.2.2) for the CHANNEL FUNCTIONAL TEST of the one-rod-out interlock provide adequate assurance of OPERABILITY. As such, the requirement to perform CTS 4.10.A.1.a "within 2 hours prior" and CTS 4.10.A.2 "within 24 hours prior to the start of" use of the component has been deleted. If the Surveillance has not been performed within the specified interval, use of the component is not allowed since proposed SR 3.0.1 (CTS 4.0.A) requires a Surveillance be met within the specified Frequency while in the applicable MODE or condition. Proposed SR 3.0.1 (CTS 4.0.C) also states that failure to meet the Surveillance constitutes failure to meet the LCO, which would then require the ACTIONS of the LCO to be taken. If these specific Surveillance Requirements are not performed with the specified Frequency prior to entering the applicable condition, then as soon as the applicable condition is entered, this would result in the LCO not being met. The ACTIONS for ITS 3.9.2 require immediate action to be taken to exit the Applicability of the LCO. Therefore, this effectively ensures that the Applicability of the LCO is not entered with the Surveillance not current. Additionally, plant operational experience has shown the normal periodic Surveillance Frequencies to be adequate for maintaining OPERABILITY.

L.4 To properly perform, without use of jumpers, a CHANNEL FUNCTIONAL TEST of the one-rod-out interlock as required by CTS 4.10.A.2, a control rod must be withdrawn. However, CTS 4.0.A (proposed SR 3.0.1) requires a Surveillance to be met within the specified Frequency while in the applicable MODE or condition. This essentially ensures that the Applicability of the LCO is not entered with the Surveillance not current. If this specific Surveillance Requirement is not performed within the specified Frequency prior to entering the applicable MODE and condition, then as soon as the applicable MODE and condition are entered, this would result in the LCO not being met. The Actions

TECHNICAL CHANGES - LESS RESTRICTIVE

L.4 (cont'd) for CTS 3.10.A (ITS 3.9.2) require immediate action to be taken to exit the Applicability of the LCO. Therefore, an allowance in CTS 4.10.A.2 (proposed SR 3.9.2.2) is provided to enter the LCOs Applicability for a short time (1 hour) to provide adequate time to perform the required Surveillance. The 1 hour Frequency is considered adequate because of the procedural controls on control rod withdrawals and indications available in the control room to alert the operator of control rods not fully inserted.

L.5 CTS 4.10.A.3 requires the one-rod-out interlock to be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST before resuming control rod withdrawal following repair, maintenance, or replacement of any component that could affect the one-rod-out interlock. Any time the OPERABILITY of a system or component has been affected by repair, maintenance, or replacement of a component, post maintenance testing is required to demonstrate OPERABILITY of the system or component. After restoration of a component that caused a required SR to be failed, proposed SR 3.0.1 (CTS 4.0.A) requires the appropriate SRs (in this case CTS 4.10.A.2, proposed SR 3.9.2.2) to be performed to demonstrate the OPERABILITY of the affected components. Therefore, explicit post maintenance Surveillance Requirements of CTS 4.10.A.3 are not required and have been deleted from the ITS. Entry into the applicable specified condition without performing this post maintenance testing also continues to be excluded except where allowed, as discussed in the Bases for proposed SR 3.0.1.

RELOCATED SPECIFICATIONS

None

A.1

3.10 - LIMITING CONDITIONS FOR OPERATION

C. Control Rod Position [A.2]

LCO 3.9.3 All control rods shall be fully inserted[a].

APPLICABILITY:

OPERATIONAL MODE 5 ~~during CORE ALTERATION(s)~~[b]. when loading fuel assemblies into the core [L.1]

ACTION:

ACTION A With all control rods not fully inserted, suspend ~~all other CORE ALTERATION(s)~~, loading fuel assemblies into the core [L.1] ~~except that one control rod may be withdrawn under control of the reactor mode switch Refuel position one-rod-out interlock~~. [A.2]

4.10 - SURVEILLANCE REQUIREMENTS

C. Control Rod Position

SR 3.9.3.1 All control rods shall be verified to be fully inserted, except as specified:

~~1. Within 2 hours prior to:~~

~~a. The start of CORE ALTERATION(s).~~ [L.2]

~~b. The withdrawal of one control rod under the control of the reactor mode switch Refuel position one-rod-out interlock.~~ [A.2]

2. At least once per 12 hours.

~~a Except control rods removed per Specification 3.10.I or 3.10.J or one control rod withdrawn under control of the reactor mode switch refuel position one-rod-out interlock.~~ [A.2]

~~b See Special Test Exception 3.12.B~~

DISCUSSION OF CHANGES
ITS: 3.9.3 - CONTROL ROD POSITION

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 CTS 3.10.C footnote (a), which provides a cross reference to CTS 3.10.I and 3.10.J, and the CTS 3.10.C Applicability footnote (b), which provides a cross reference to CTS 3.12.B, have been deleted. The format of the ITS does not include providing cross references. Proposed LCO 3.0.7 adequately prescribes the use of the Special Operations LCOs without such references. Therefore the existing references in CTS 3.10.C footnote (a) to CTS 3.10.I and 3.10.J and the existing references in CTS 3.10.C Applicability footnote (b) to CTS 3.12.B serve no functional purpose, and their removal is administrative.

In addition, the allowance in the CTS 3.10.C footnote (a), Action, and CTS 4.10.C.1.b, that fuel can be loaded into the core when a rod is withdrawn under control of the reactor mode switch refuel position one-rod-out interlock has been deleted since the interlock will preclude fuel loading with a rod withdrawn. The only way fuel could be loaded with a rod withdrawn would be when the interlock is inoperable, and CTS 3.10.A (ITS 3.9.1 and ITS 3.9.2) will prohibit loading fuel and require withdrawn rods to be inserted if the interlock is inoperable. Therefore, since it is not possible to utilize the footnote and Surveillance allowance, the deletion is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 3.10.C and its Action, require that all control rods be inserted in Operational MODE 5 during Core Alterations (except, per CTS 3.10.C footnote (a) or the Action, rods may be removed in accordance with other allowances). The Applicability of the CTS 3.10.C requirement that all control rods be fully inserted is revised to "when loading fuel assemblies into the core." The intent of the change in Applicability, and associated Action to exit the Applicability, is to

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 (cont'd) establish the requirement that all control rods are inserted only in those situations that could add positive reactivity but are not covered by other Technical Specifications. The Core Alterations covered by the CTS 3.10.C Applicability (Operational MODE 5 during Core Alterations; given the changes to the definition of Core Alterations in Section 1.0) include: (1) fuel loading; (2) control rod movement while fuel is in the associated cell (unless the control rod is removed in accordance with other allowances). The new Applicability for ITS 3.9.3 covers fuel loading and ITS 3.9.2 (one-rod-out interlock) covers control rod movement while in MODE 5. However, the new Applicability will not require all control rods to be fully inserted while unloading fuel. Eliminating the requirement that all control rods be fully inserted while unloading fuel is not safety significant because fuel unloading cannot increase the reactivity of the core or cause an inadvertent criticality. In addition, the MODE 5 requirements of ITS 3.1.1, "SHUTDOWN MARGIN (SDM)," will still be required to be met during this condition. These SDM requirements are adequate to ensure an inadvertent criticality does not occur. Therefore, this less restrictive change has no impact on safety.

L.2 The normal periodic Surveillance Frequency (once per 12 hours in CTS 4.10.C.2 and ITS SR 3.9.3.1) for verification of control rod insertion status provides adequate assurance all control rods are fully inserted. As such, the requirement to perform the Surveillance Requirement "within 2 hours prior to the start of" Core Alterations (see Discussion of Change L.1 for modifications to the Applicability; "During Core Alterations" is changed to "when loading fuel assemblies in the core") is deleted. If the Surveillance is not performed within the normal surveillance interval, loading of fuel assemblies in the core may not be performed since ITS SR 3.0.1 (CTS 4.0.A and CTS 4.0.C) requires a Surveillance be met within the specified Frequency while in the applicable MODE or condition. ITS SR 3.0.1 (CTS 4.0.C) also states that failure to meet the Surveillance constitutes failure to meet the LCO, which would then require the ACTIONS of the LCO to be taken. If this specific Surveillance Requirement is not performed within the specified Frequency prior to entering the applicable condition, this would result in the LCO not being met. The ACTIONS for this LCO require immediate action to be taken to exit the Applicability of the LCO. Therefore, this effectively ensures that the Applicability of the LCO is not entered with the Surveillance not current. The normal periodic Surveillance Frequency ensures the requirements are adequately checked prior to and during loading of fuel assemblies in the core.

RELOCATED SPECIFICATIONS

None

REACTIVITY CONTROL

3.3 - LIMITING CONDITIONS FOR OPERATION

I. Control Rod Position Indication System

LCO 3.9.4 ~~All~~ Each control rod "full-in" position indicator~~s~~ channel shall be OPERABLE. L.1

APPLICABILITY:

OPERATIONAL MODE(s) 1, 2, and 5[a]. M.1

ACTION:

1. In OPERATIONAL MODE 1 or 2 with one or more control rod position indicators inoperable, within one hour either:

   a. Determine the position of the control rod by an alternate method, or

   b. Move the control rod to a position with an OPERABLE position indicator, or

   c. Declare the control rod inoperable, fully insert the inoperable withdrawn control rod(s), and disarm the associated directional control valves[b] either:

      1) Electrically, or

      2) Hydraulically by closing the drive water and exhaust water isolation valves.

<See ITS 3.1.3>

4.3 - SURVEILLANCE REQUIREMENTS

I. Control Rod Position Indication System L.1

SR 3.9.4.1 The control rod "full-in" position indication ~~system~~ channel shall be determined OPERABLE by verifying:

~~1. At least once per 24 hours that the position of each control rod is indicated.~~

~~2. That the indicated control rod position changes during the movement of the control rod drive when performing Surveillance Requirement 4.3.C.1.~~

~~3. Deleted.~~

M.1

a ~~In OPERATIONAL MODE 5, this Specification is applicable for withdrawn control rods~~ ~~and is not applicable to control rods removed per Specification 3.10.I or 3.10.J.~~ A.2

b May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod(s) to OPERABLE status. <See ITS 3.1.3>

A.1

REACTIVITY CONTROL

3.3 - LIMITING CONDITIONS FOR OPERATION

4.3 - SURVEILLANCE REQUIREMENTS

2. With the provisions of ACTION 1 above not met, be in at least HOT SHUTDOWN within the next 12 hours. <See ITS 3.1.3>

add proposed ACTIONS Note A.3

ACTION A 3. In OPERATIONAL MODE 5[a] with a ~~withdrawn~~ full-in control rod position indicator inoperable: M.1 L.1

a. Move the control rod to a position with an OPERABLE position indicator, or M.1

b. Fully insert the control rod.

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a ~~In OPERATIONAL MODE 5, this Specification is applicable for withdrawn control rods~~ M.1 ~~and is not applicable to control rods removed per Specification 3.10.I or 3.10.J.~~ A.2

DISCUSSION OF CHANGES
ITS: 3.9.4 - CONTROL ROD POSITION INDICATION

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 The second part of the CTS 3.3.I Applicability footnote (a), which provides a cross reference to CTS 3.10.I and 3.10.J, has been deleted. The format of the ITS does not include providing cross references. Proposed LCO 3.0.7 adequately prescribes the use of the Special Operations LCOs without such references. Therefore the existing reference in the CTS 3.3.I Applicability footnote (a) to CTS 3.10.I and 3.10.J serves no functional purpose, and its removal is administrative.

A.3 This proposed change to CTS 3.3.I Action 3 provides explicit instructions for application of the Actions for Technical Specification compliance. In conjunction with ITS 1.3 - "Completion Times," the ITS 3.9.4 ACTIONS Note ("Separate Condition entry is allowed for each channel.") provides direction consistent with the intent of the existing Action for an inoperable control rod position indication instrumentation channel. Since this change only provides more explicit instructions that preserve the current interpretation of the existing specifications, this change is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 The Applicability of CTS 3/4.3.I is Operational MODE 5, for withdrawn control rods. The Applicability of ITS 3.9.4 is MODE 5, regardless of whether or not a control rod is withdrawn. CTS 3.3.I Action 3 for inoperable control rod position indication in MODE 5 only requires movement of the control rod to a position where it has an OPERABLE position indicator or to insert the control rod. The ACTIONS of ITS 3.9.4 require that fuel movement and control rod withdrawal be suspended (ITS 3.9.4 Required Actions A.1.1 and A.1.2) and all insertable control rods in core cells containing fuel assemblies be fully inserted (ITS 3.9.4 Required Action A.1.3), or alternatively, that the control rod be fully inserted and disarmed (ITS 3.9.4 Required Actions A.2.1 and A.2.2). Required Actions A.1.1 and A.1.2 prevent additional core reactivity changes while actions are being taken to insert the control rod with the inoperable position channel. The alternative Required Actions require immediate initiation of insertion of the

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 (cont'd) control rod associated with the inoperable position channel and disarming of the associated fully inserted control rod drive. These Required Actions ensure the control rod associated with the inoperable position channel cannot be withdrawn, thus precluding two control rods from being inadvertently withdrawn due to control rod position channel failure. Finally, a Completion Time has been added to specify that the Required Action be completed "immediately." The CTS 3.3.I Action 3 does not clearly specify a time period to start or complete the Action. These changes represent additional restrictions on plant operation to ensure adequate compensatory measures are taken to protect against potential reactivity excursions from fuel assembly insertions or control rod withdrawals during MODE 5 when full-in position indication channels are inoperable.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

None

"Specific"

L.1 The CTS 3.3.I requirement for MODE 5 control rod position indication requires all position indicators to be OPERABLE. This position indication requirement is omitted in ITS 3.9.4 in that no position indication is proposed to be required other than the full-in position indication. The OPERABILITY of the control rod "full-in" position indication for each control rod (whether the control rod is inserted or withdrawn) is proposed to be required to support OPERABILITY of the refueling interlocks (ITS 3.9.1) and OPERABILITY of the one-rod-out interlock (ITS 3.9.2). While the full-in position indicator appears to be required, the CTS 3.3.I Actions provided (if a full-in position indicator is inoperable) do not adequately compensate for its inoperability (CTS 3.3.I Action 3 only requires the position of the control rod to be known or the rod to be inserted).

ITS LCO 3.9.4 omits the general position indication requirement and adds a specific requirement for the full-in position indication to be OPERABLE for each control rod, regardless of the actual position of the control rod. This added restriction details requirements consistent with the intent of requiring the refueling interlocks and the one-rod-out interlock to be OPERABLE. ITS 3.9.4 and ITS 3.9.5 for MODE 5 do not require the specific position of a withdrawn control rod to be indicated. The ITS 3.9.4 requirement only requires that a

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 (cont'd) withdrawn control rod not indicate full-in. Since only one control rod can be withdrawn while in MODE 5 (exceptions to this are addressed, in Special Operations LCOs - Section 3.10), and the position of the control rod is not a consideration in any accident or transient when in this condition, the precise position of the control rod is insignificant. The critical safety issue, whether the control rod is fully inserted or not, is addressed by the ITS LCO 3.9.4 requirement.

In addition, the Surveillance Requirements have also been modified to be consistent with this concept (the full-in indicator only must be OPERABLE). The new Surveillance (proposed SR 3.9.4.1) requires that each time a control rod is withdrawn from the full-in position, the full-in indication is indicating correctly (i.e., it is not indicating full-in when a control rod is withdrawn). The current requirements to verify the position of the control rod every 24 hours (CTS 4.3.I.1) and that the control rod position changes during exercise tests (CTS 4.3.I.2), have been deleted. CTS 4.3.I.1 is not necessary since, as stated above, only the "full-in" position indication is needed. The "full-in" position indication is verified by proposed SR 3.9.4.1. CTS 4.3.I.2 has been deleted since it is not currently required in MODE 5. The Surveillance is only required when performing CTS 4.3.C.1, which is only required in MODES 1 and 2, not in MODE 5.

RELOCATED SPECIFICATIONS

None

A.1

3.3 - LIMITING CONDITIONS FOR OPERATION

G. Control Rod Scram Accumulators

All control rod scram accumulators shall be OPERABLE. A.2

APPLICABILITY

OPERATIONAL MODE(s) 1, 2 and 5[(a)]. A.3

ACTION:

1. In OPERATIONAL MODE 1 or 2.

   a. With one control rod scram accumulator inoperable, within 8 hours:

      1) Restore the inoperable accumulator to OPERABLE status, or

      2) Declare the control rod associated with the inoperable accumulator inoperable.

   b. With the provisions of ACTION 1.a above not met, be in at least HOT SHUTDOWN within the next 12 hours.

   c. With more than one control rod scram accumulator inoperable, declare the associated control rods inoperable and:

<See ITS 3.1.5>

4.3 - SURVEILLANCE REQUIREMENTS

G. Control Rod Scram Accumulators

SR 3.9.5.2 Each control rod scram accumulator shall be determined OPERABLE at least once per 7 days by verifying that the indicated press is ≥940 psig ~~unless the control rod is fully inserted and disarmed, or scrammed~~. A.4

add proposed control rod scram insertion capability M.1

add proposed SR 3.9.5.1

---

a In OPERATIONAL MODE 5, this Specification is applicable for the accumulators associated with each withdrawn control rod ~~and is not applicable to control rods removed per Specification 3.10.I or 3.10.J~~. A.2 A.3

3.3 - LIMITING CONDITIONS FOR OPERATION

4.3 - SURVEILLANCE REQUIREMENTS

1) If the control rod associated with any inoperable scram accumulator is withdrawn, immediately verify that at least one control rod drive pump is operating by inserting at least one withdrawn control rod at least one notch. With no control rod drive pump operating, immediately place the reactor mode switch in the Shutdown position.

2) Fully insert the inoperable control rods and disarm the associated directional control valves[b] either:

a) Electrically, or

b) Hydraulically by closing the drive water and exhaust water isolation valves.

d. With the provisions of ACTION 1.c.2 above not met, be in at least HOT SHUTDOWN within 12 hours.

See ITS 3.1.5

2. In OPERATIONAL MODE 5[a]: A.2 A.3

ACTION A

a. With one withdrawn control rod with its associated scram accumulator inoperable, fully insert the affected control rod ~~and disarm the associated directional control valves[b] within one hour, either:~~ A.5

add proposed ACTION A for control rod scram insertion capability M.1

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a In OPERATIONAL MODE 5, this Specification is applicable for the accumulators associated with each withdrawn control rod ~~and is not applicable to control rods removed per Specification 3.10.I or 3.10.J.~~ A.2 A.3

~~b May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod to OPERABLE status.~~ A.5

A.1

3.3 - LIMITING CONDITIONS FOR OPERATION

4.3 - SURVEILLANCE REQUIREMENTS

~~1) Electrically, or~~

~~2) Hydraulically by closing the drive water and exhaust water isolation valves.~~ A.5

b. With more than one withdrawn control rod with the associated scram accumulator inoperable or no control rod drive pump operating, immediately place the reactor mode switch in the Shutdown position. A.6 moved to ITS 3.10.7

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 The Operational MODE 5 requirements of CTS 3.3.G have been rewritten to say "Each withdrawn control rod shall be OPERABLE," since ITS 3.9.5 includes requirements other than accumulator requirements (see Discussion of Change M.1 below). ITS LCO 3.9.5, as it applies to the accumulators, is consistent with the CTS, since CTS 3.3.G only requires an accumulator to be OPERABLE in Operational MODE 5 if its associated control rod is withdrawn (Applicability footnote (a)). The ITS Bases describes control rod OPERABILITY to include accumulator OPERABILITY and the accumulator requirement is also found in the Surveillance Requirement section of ITS 3.9.5 (proposed SR 3.9.5.2). As such, this change is considered administrative.

A.3 The second portion of the CTS 3.3.G Applicability footnote (a), which provides a cross reference to CTS 3.10.I and 3.10.J, has been deleted. The format of the ITS does not include providing cross references. Proposed LCO 3.0.7 adequately prescribes the use of the Special Operations LCOs without such references. Therefore the existing reference in CTS 3.3.G footnote (a) to CTS 3.10.I and 3.10.J serves no functional purpose, and its removal is administrative.

A.4 CTS 4.3.G requires each control rod scram accumulator to be verified OPERABLE every 7 days "unless the control rod is inserted and disarmed or scrammed." Stating the conditions for an exception to performance of the accumulator Surveillance that are equivalent to the Applicability of the LCO is unnecessary. If the accumulator is not required to be Operable, CTS 4.0.C (proposed SR 3.0.1) states that Surveillances are not required to be performed. Therefore, these words in CTS 4.3.G (unless the control rod is inserted and disarmed or scrammed) have been deleted and this deletion is administrative.

A.5 During MODE 5 with an accumulator associated with a withdrawn control rod inoperable, the control rod is required to be inserted (CTS 3.3.G Action 2.a and ITS 3.9.5 Required Action A.1). Once the control rod is fully inserted, the accumulator is no longer required to be OPERABLE (CTS 3.3.G footnote (a) and ITS LCO 3.9.5) and the entry conditions for the ACTIONS are no longer applicable, thus no additional ACTIONS are required (this is consistent with both

ADMINISTRATIVE

A.5 (cont'd) CTS 3.0.B and proposed LCO 3.0.2). Therefore, the action to disarm the associated directional control valves has been deleted. In addition, the allowance in CTS 3.3.G Action 2.a footnote (b) to allow the directional control valves to be rearmed intermittently under administrative control to permit testing associated with restoring the control rod to OPERABLE status has been deleted. This allowance is not necessary since the requirement to disarm the associated directional control valves is not required and since any activities necessary to permit testing associated with restoring the control rod to OPERABLE status would have been allowed in accordance with CTS 3.0.E (ITS LCO 3.0.5).

A.6 The requirements of CTS 3.3.G Action 2.b for when more than one control rod is withdrawn with the associated scram accumulators inoperable or no control rod drive pump operating have been moved to ITS 3.10.7 in accordance with the BWR ISTS, NUREG-1433, Rev. 1. Any technical changes to the requirements will be addressed in the Discussion of Changes for ITS: 3.10.7.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 A new requirement has been added for control rod OPERABILITY during refueling, i.e., each withdrawn control rod must be capable of insertion (by scram). This new requirement will be covered as part of the requirement for a withdrawn control rod to be OPERABLE. A Surveillance Requirement (proposed SR 3.9.5.1) has also been added. Thus, if the new Surveillance Requirement is not met, the withdrawn control rod will be inoperable. In addition, an appropriate ACTION (ITS 3.9.5 ACTION A) has been added to provide proper actions if the control rod is inoperable due to this new reason. These changes represent additional restrictions on plant operations necessary to ensure the control rod scram function is available for mitigation should a prompt reactivity excursion occur during refueling.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

None

"Specific"

None

RELOCATED SPECIFICATIONS

None

A.1

3.10 - LIMITING CONDITIONS FOR OPERATION

G. Water Level - Reactor Vessel

LCO 3.9.6 At least 23 feet of water shall be maintained over the top of the reactor pressure vessel flange.

new fuel requirements only moved to ITS 3.9.7

APPLICABILITY:

During handling of fuel assemblies or control rods within the reactor pressure vessel while in OPERATIONAL MODE 5 when the fuel assemblies or control rods being handled are irradiated or the fuel assemblies or control rods seated within the reactor vessel are irradiated.

A.2 moved to ITS 3.9.7

A.3

A.2 moved to ITS 3.9.7

ACTION:

ACTION A With the requirements of the above specification not satisfied, suspend all operations involving handling of fuel assemblies or control rods within the reactor pressure vessel after placing all fuel assemblies and control rods in a safe condition.

new fuel requirements only moved to ITS 3.9.7

A.2 moved to ITS 3.9.7

LA.1

4.10 - SURVEILLANCE REQUIREMENTS

G. Water Level - Reactor Vessel

SR 3.9.6.1 The reactor vessel water level shall be determined to be at least its minimum required depth within 2 hours prior to the start of and at least once per 24 hours during handling of fuel assemblies or control rods within the reactor pressure vessel.

L.1

A.2 moved to ITS 3.9.7

DISCUSSION OF CHANGES
ITS: 3.9.6 - RPV WATER LEVEL — IRRADIATED FUEL

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 The CTS 3/4.10.G requirements for handling new fuel assemblies and control rods have been moved to ITS 3.9.7 in accordance with the BWR ISTS, NUREG-1433, Rev. 1. Any technical changes to the requirements will be addressed in the Discussion of Changes for ITS: 3.9.7.

A.3 The Applicability of CTS 3/4.10.G is during handling of fuel assemblies or control rods within the reactor pressure vessel "while in OPERATIONAL MODE 5." The Applicability of ITS 3.9.6 does not explicitly include the MODE 5 requirement. (In addition, ITS 3.9.6 deals only with handling irradiated fuel assemblies - see Discussion of Change A.2 above.) The only MODE where it is possible to move irradiated fuel assemblies within the reactor pressure vessel is MODE 5. In MODES 1, 2, 3 and 4, the reactor vessel head is on and no activities associated with movement of irradiated fuel assemblies within the reactor pressure vessel are possible. Therefore, it is unnecessary to state "OPERATIONAL MODE 5" (ITS MODE 5) in the Applicability of ITS 3.9.6 and the removal of "OPERATIONAL MODE 5" from the Applicability is considered to be administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The allowance in the CTS 3.10.G Action to place all fuel assemblies in a safe condition prior to suspending load movement in the event of low water level is proposed to be relocated to the Bases. This allowance is not necessary for assuring, in the case of reactor vessel water level not within limits, actions are taken to preclude a fuel handling accident from occurring. ITS 3.9.6 Required

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.1 (cont'd) Action A.1, which requires suspension of movement of irradiated fuel assemblies within the reactor pressure vessel, is adequate to preclude a fuel handling accident from occurring. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

"Specific"

L.1 The normal 24 hour periodic Surveillance Frequency of CTS 4.10.G (proposed SR 3.9.6.1) for the verification of reactor vessel water level provides adequate assurance of OPERABILITY. As such, the requirement to perform CTS 4.10.G "within 2 hours prior to the start of" handling fuel assemblies has been deleted. If the Surveillance has not been performed within the specified interval, handling fuel assemblies is not allowed since proposed SR 3.0.1 (CTS 4.0.A and 4.0.B) requires a Surveillance be met within the specified Frequency while in the applicable MODE or condition. Proposed SR 3.0.1 (CTS 4.0.C) also states that failure to meet the Surveillance constitutes failure to meet the LCO, which would then require the ACTIONS of the LCO to be taken. If this specific Surveillance Requirement is not performed within the specified Frequency prior to entering the applicable condition, then as soon as the applicable condition is entered, this would result in the LCO not being met. The ACTIONS of ITS 3.9.6 require immediate action to be taken to exit the Applicability of the LCO. Therefore, this effectively ensures that the Applicability of the LCO is not entered with the Surveillance not current. Additionally, plant operational experience has shown the normal periodic Surveillance Frequency to be adequate for maintaining OPERABILITY.

RELOCATED SPECIFICATIONS

None

3.10 - LIMITING CONDITIONS FOR OPERATION

G. Water Level - Reactor Vessel

LCD 3.9.7 At least 23 feet of water shall be maintained over the top of the reactor pressure vessel ~~flange~~. the irradiated fuel assemblies seated within L.1 new

APPLICABILITY:

During handling of fuel assemblies or control rods within the reactor pressure vessel ~~while in OPERATIONAL MODE 5~~ A.2 when ~~the fuel assemblies or control rods being handled~~ are irradiated or the fuel assemblies ~~or control rods~~ seated within the reactor vessel are irradiated. L.1

ACTION:

ACTION A With the requirements of the above specification not satisfied, suspend all operations involving handling of fuel assemblies or control rods within the reactor pressure vessel ~~after placing all fuel assemblies and control rods in a safe condition~~. new L.1 LA.1

4.10 - SURVEILLANCE REQUIREMENTS

G. Water Level - Reactor Vessel

SR 3.9.7.1 The reactor vessel water level shall be determined to be at least its minimum required depth ~~within 2 hours prior to the start of and~~ at least once per 24 hours during handling of fuel assemblies or control rods within the reactor pressure vessel. L.2 new L.1

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 The Applicability of CTS 3/4.10.G is during handling of fuel assemblies or control rods within the reactor pressure vessel "while in OPERATIONAL MODE 5." The Applicability of ITS 3.9.7 does not explicitly include the MODE 5 requirement. (In addition, ITS 3.9.7 deals only with handling new fuel assemblies or control rods - see Discussion of Change L.1 below.) The only MODE where it is possible to move new fuel assemblies or handle control rods within the reactor pressure vessel is MODE 5. In MODES 1, 2, 3 and 4, the reactor vessel head is on and no activities associated with movement of new fuel assemblies or handling of control rods within the reactor pressure vessel are possible. Therefore, it is unnecessary to state "OPERATIONAL MODE 5" (ITS MODE 5) in the Applicability of ITS 3.9.7 and the removal of "OPERATIONAL MODE 5" from the Applicability is considered to be administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

"Generic"

LA.1 The allowance in the CTS 3.10.G Action to place fuel assemblies and control rods in a safe condition prior to suspending movement in the event of low water level is proposed to be relocated to the Bases. This allowance is not necessary for assuring, in the case of reactor vessel water level not within limits, actions are taken to preclude a fuel handling accident from occurring. ITS 3.9.7 Required Action A.1, which requires suspension of movement of new fuel assemblies and handling of control rods within the reactor pressure vessel, is adequate to preclude a fuel handling accident from occurring. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Specific"

L.1 CTS 3.10.G, which provides reactor vessel water level requirements during handling of fuel assemblies and control rods within the reactor pressure vessel (RPV), has been split into two Specifications, ITS 3.9.6 and ITS 3.9.7, to allow an option for additional flexibility. ITS 3.9.6 provides the requirements for movement of only irradiated fuel assemblies within the RPV, with water level determined from the top of the RPV flange, consistent with CTS 3.10.G. ITS 3.9.7 provides the requirements for movement of new fuel assemblies and control rods within the RPV when irradiated fuel assemblies are seated within the RPV, with water level determined from the top of irradiated fuel assemblies seated within the RPV rather than from the top of the RPV flange. In addition, the reference to irradiated control rods seated within the reactor vessel has been deleted since damage to the control rod blades is not assumed in the fuel handling accident analysis. The decrease in the water level requirements from 23 feet above the top of the RPV flange to 23 feet above the top of the irradiated fuel assemblies seated within the RPV is based on requiring sufficient water necessary to retain iodine fission product activity in the event of a fuel handling accident. The fuel handling accident would release fission products at the top of the irradiated fuel seated within the RPV when a new fuel assembly or control rod is dropped. If dropped on the RPV flange, it would not create a release of fission products since these components do not contain fission products. Therefore, the reduction of water level still ensures that the assumed iodine retention factors are met. In addition, the number of irradiated fuel pins that are damaged in the drop of a new fuel assembly or control rod is less than that assumed in the dropping of an irradiated fuel assembly. Thus, the amount of fission products released is less.

L.2 The normal 24 hour periodic Surveillance Frequency of CTS 4.10.G (proposed SR 3.9.7.1) for the verification of the reactor vessel water level provides adequate assurance of OPERABILITY. As such, the requirement to perform CTS 4.10.G "within 2 hours prior to the start of" handling fuel assemblies or control rods has been deleted. If the Surveillance has not been performed within the specified interval, handling fuel assemblies or control rods is not allowed since proposed SR 3.0.1 (CTS 4.0.A and 4.0.B) requires a Surveillance be met within the specified Frequency while in the applicable MODE or condition. Proposed SR 3.0.1 (CTS 4.0.C) also states that failure to meet the Surveillance constitutes failure to meet the LCO, which would then require the ACTIONS of the LCO to be taken. If this specific Surveillance Requirement is not performed within the specified Frequency prior to entering the applicable condition, then as soon as the applicable condition is entered, this would result in the LCO not

TECHNICAL CHANGES - LESS RESTRICTIVE

L.2 (cont'd) being met. The ACTIONS of ITS 3.9.7 require immediate action to be taken to exit the Applicability of the LCO. Therefore, this effectively ensures that the Applicability of the LCO is not entered with the Surveillance not current. Additionally, plant operational experience has shown the normal periodic Surveillance Frequency to be adequate for maintaining OPERABILITY.

RELOCATED SPECIFICATIONS

None

3.10 - LIMITING CONDITIONS FOR OPERATION

K. Shutdown Cooling and Coolant Circulation - High Water Level

LCO 3.9.8 At least one shutdown cooling (SDC) loop shall be OPERABLE and in operation[a] ~~, with at least:~~ LA.1

~~1. One OPERABLE SDC pump, and~~

~~2. One OPERABLE SDC heat exchanger.~~

APPLICABILITY:

OPERATIONAL MODE 5, when irradiated fuel is in the reactor vessel and the water level is ≥23 feet above the top of the reactor pressure vessel flange.

ACTION:

ACTION A 1. With no SDC loop OPERABLE, within one hour and at least once per 24 hours thereafter, demonstrate the operability of at least one alternate method capable of decay heat removal.

ACTION B Otherwise, suspend all operations involving an increase in the reactor decay heat load and establish SECONDARY CONTAINMENT INTEGRITY within 4 hours. A.2 A.3 A.4

ACTION C 2. With no SDC loop in operation, within one hour establish reactor coolant circulation by an alternate method, monitor reactor coolant temperature at least once per hour, and verify reactor coolant circulation at least once per 12 hours.

4.10 - SURVEILLANCE REQUIREMENTS

K. Shutdown Cooling and Coolant Circulation - High Water Level

SR 3.9.8.1 At least one SDC loop shall be verified to be in operation ~~and circulating reactor coolant~~ at least once per 12 hours. LA.2

LCO 3.9.8 Note a The shutdown cooling pump may be removed from operation for up to 2 hours per 8-hour period.

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 The CTS 3.10.K Action 1 requires that all operations involving an increase in the reactor decay heat load be suspended. ITS 3.9.8 Required Action B.1 requires only that loading of irradiated fuel assemblies into the reactor pressure vessel be suspended, since this is the only practical method of increasing the reactor decay heat load (movement of a single control rod, which is the only other type of positive reactivity change, does not increase heat load). The proposed requirement results in the same response as the current requirement, therefore, the change is merely an administrative preference of presentation.

A.3 The CTS 3.10.K Action 1 requirement to "establish SECONDARY CONTAINMENT INTEGRITY within 4 hours" provides a period of time (4 hours) in which integrity can be violated even if capable of being maintained. Additionally, if the plant status is such that integrity is not capable of being established within 4 hours, the existing Action results in "non-compliance with the Technical Specifications" and a requirement for an LER. The intent of the Action is more appropriately presented in ITS 3.9.8 Required Actions B.2, B.3, and B.4. With the proposed Required Actions, a significantly more conservative requirement to establish and maintain the secondary containment boundary is imposed. No longer would the provision to violate the boundary for up to 4 hours exist. However, this conservatism comes from the understanding that if best efforts to establish the boundary exceeded 4 hours, no LER will be required.

This interpretation of the Actions intent is supported by the BWR ISTS, NUREG-1433, Revision 1. Because this is an enhanced presentation of existing intent, the proposed change is considered administrative.

A.4 This proposed change to the CTS 3.10.K Action 1 replaces the use of the defined term SECONDARY CONTAINMENT INTEGRITY with the essential elements of that definition. Refer also to the Discussion of Changes in the Definitions section (Chapter 1.0), which addresses deletion of the SECONDARY CONTAINMENT INTEGRITY definition. The change is editorial in that the

ADMINISTRATIVE

A.4 (cont'd) requirements are specifically addressed by ITS 3.9.8 Required Actions B.2, B.3, and B.4. Therefore, the change is a presentation preference adopted by the BWR ISTS, NUREG-1433, Revision 1, and is considered administrative only.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The details in CTS 3.10.K.1 and 3.10.K.2 of what constitutes an OPERABLE shutdown cooling subsystem are proposed to be relocated to the Bases. The Bases will indicate that an OPERABLE shutdown cooling subsystem consists of an OPERABLE pump, heat exchanger, reactor building closed cooling water (RBCCW) capable of providing cooling to the heat exchanger, and the associated piping and valves to ensure an OPERABLE flow path. The details for subsystem OPERABILITY are not necessary in ITS 3.9.8. The definition of OPERABILITY suffices. Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.2 The detail of the method in CTS 4.10.K of verifying operation of the shutdown cooling subsystem (circulating reactor coolant) is proposed to be relocated to the Bases. This detail is not necessary for assuring the shutdown cooling subsystem is in operation. Proposed SR 3.9.8.1 requires verification a shutdown cooling subsystem is operating and is adequate to ensure a shutdown cooling subsystem is circulating reactor coolant. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

"Specific"

None

RELOCATED SPECIFICATIONS

None

3.10 - LIMITING CONDITIONS FOR OPERATION

L. Shutdown Cooling and Coolant Circulation - Low Water Level

LCO 3.9.9 Two shutdown cooling (SDC) loops shall be OPERABLE and at least one loop shall be in operation[a]~~, with each loop consisting of at least:~~ LA.1

~~1. One OPERABLE SDC pump, and~~

~~2. One OPERABLE SDC heat exchanger.~~

APPLICABILITY:

OPERATIONAL MODE 5, when irradiated fuel is in the reactor vessel and the water level is <23 feet above the top of the reactor pressure vessel flange.

ACTION:

ACTION A 1. With less than the above required SDC loops OPERABLE, within one hour and at least once per 24 hours thereafter, demonstrate the OPERABILITY of at least one alternate method capable of decay heat removal for each inoperable SDC loop.

add proposed ACTION B M.1

ACTION C 2. With no SDC loop in operation, within one hour establish reactor coolant circulation by an alternate method, monitor reactor coolant temperature at least once per hour, and verify reactor coolant circulation at least once per 12 hours.

4.10 - SURVEILLANCE REQUIREMENTS

L. Shutdown Cooling and Coolant Circulation - Low Water Level

SR 3.9.9.1 At least one SDC loop shall be verified to be in operation ~~and circulating reactor coolant~~ at least once per 12 hours. LA.2

LCO 3.9.9 Note a The shutdown cooling pump may be removed from operation for up to 2 hours per 8-hour period.

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 A new ACTION (ITS 3.9.9 ACTION B) has been added to require the following actions to be initiated if an alternate method of decay heat removal is not verified in accordance with the CTS 3.10.L Action 1 (ITS 3.9.9 ACTION A):

a) restore secondary containment to OPERABLE status (ITS 3.9.9 Required Action B.1);

b) restore one SGT subsystem to OPERABLE status (ITS 3.9.9 Required Action B.2); and

c) restore isolation capability in each required secondary containment penetration flowpath not isolated (ITS 3.9.9 Required Action B.3).

These requirements will ensure the secondary containment boundary is intact to filter any release in the unlikely case the loss of shutdown cooling results in a release of fission products. This change is an additional restriction on plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The details in CTS 3.10.L.1 and 3.10.L.2 of what constitutes an OPERABLE shutdown cooling subsystem are proposed to be relocated to the Bases. The Bases will indicate that an OPERABLE shutdown cooling subsystem consists of an OPERABLE pump, heat exchanger, reactor building closed cooling water (RBCCW) capable of providing cooling to the heat exchanger, and the associated piping and valves to ensure an OPERABLE flow path. The details for subsystem OPERABILITY are not necessary in ITS 3.9.9. The definition of

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.1 (cont'd) OPERABILITY suffices. Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.2 The detail of the method in CTS 4.10.L of verifying operation of the shutdown cooling subsystem (circulating reactor coolant) is proposed to be relocated to the Bases. This detail is not necessary for assuring the shutdown cooling subsystem is in operation. Proposed SR 3.9.9.1 requires verification a shutdown cooling subsystem is operating and is adequate to ensure a shutdown cooling subsystem is circulating reactor coolant. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

"Specific"

None

RELOCATED SPECIFICATIONS

None

~~3.10 - LIMITING CONDITIONS FOR OPERATION~~

~~E. Communications~~

~~Direct communication shall be maintained between the control room and refueling platform personnel.~~

~~APPLICABILITY:~~

~~OPERATIONAL MODE 5, during CORE ALTERATION(s)[a].~~

~~ACTION:~~

~~When direct communication between the control room and refueling platform personnel cannot be maintained, immediately suspend CORE ALTERATION(s).~~

~~4.10 - SURVEILLANCE REQUIREMENTS~~

~~E. Communications~~

~~Direct communication between the control room and refueling platform personnel shall be demonstrated within one hour prior to the start of and at least once per 12 hours during CORE ALTERATION(s).~~

R.1

~~a Except movement of control rods with their normal drive system.~~ R.1

DISCUSSION OF CHANGES
CTS: 3/4.10.E - COMMUNICATIONS

ADMINISTRATIVE

None

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE

None

RELOCATED SPECIFICATIONS

R.1 Communication between the control room and refueling platform personnel (CTS 3/4.10.E) is maintained to ensure that refueling personnel can be promptly informed of significant changes in the plant status or core reactivity condition during refueling. The communications allow for coordination of activities that require interaction between the control room and refueling platform personnel (such as the insertion of a control rod prior to loading fuel). However, the refueling system design accident or transient response does not take credit for communications, and is designed to ensure safe refueling operations. Therefore, the requirements specified in CTS 3/4.10.E do not satisfy the NRC Policy Statement Technical Specification screening criteria as documented in the Application of Selection Criteria to the Dresden 2 and 3 Technical Specifications and will be relocated to the Technical Requirements Manual (TRM). The TRM will be incorporated by reference into the Dresden 2 and 3 UFSAR at ITS implementation. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59.

DISCUSSION OF CHANGES
ITS: SECTION 3.9 - REFUELING OPERATIONS BASES

The Bases of the current Technical Specifications for this section (pages B 3/4.10-1 through B 3/4.10-3) have been completely replaced by revised Bases that reflect the format and applicable content of the Dresden 2 and 3 ITS Section 3.9, consistent with the BWR ISTS, NUREG-1433, Rev. 1. The revised Bases are as shown in the Dresden 2 and 3 ITS Bases. In addition, pages 3/4.10-6 and 3/4.10-8, which are blank pages, have been removed.

<CTS>

3.9 REFUELING OPERATIONS

3.9.1 Refueling Equipment Interlocks

associated with the reactor mode switch refuel position 1

<3.10.A.2> LCO 3.9.1 The refueling equipment interlocks shall be OPERABLE.

<3.10.A>
<3.10.A.2>
<Appl 3.10.A> APPLICABILITY: During in-vessel fuel movement with equipment associated with the interlocks.

when the reactor mode switch is in the refuel position 1

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.10.A Act 3>	A. One or more required refueling equipment interlocks inoperable.	A.1 Suspend in-vessel fuel movement with equipment associated with the inoperable interlock(s).	Immediately

Insert ACTION A TSTF-225

<CTS> TSTF-225 INSERT ACTION A

<DOC L.3>

OR	
A.2.1 Insert a control rod withdrawal block.	Immediately
AND	
A.2.2 Verify all control rods are fully inserted in core cells containing one or more fuel assemblies.	Immediately

<CTS>

SURVEILLANCE REQUIREMENTS

<3.10.A.2>
<4.10.A.2>

SURVEILLANCE		FREQUENCY
SR 3.9.1.1	Perform CHANNEL FUNCTIONAL TEST on each of the following required refueling equipment interlock inputs: a. All-rods-in, b. Refuel platform position, c. Refuel platform [fuel grapple], fuel loaded, [d. Refuel platform fuel grapple fully retracted position,] [e. Refuel platform frame mounted hoist, fuel loaded,] [f. Refuel platform monorail mounted hoist, fuel loaded,] and [g. Service platform hoist, fuel loaded.]	7 days

2

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.9.1 - REFUELING EQUIPMENT INTERLOCKS

1. The current wording of ISTS 3.9.1 and the associated Applicability could imply that all the refueling equipment interlocks are required at all times during in-vessel fuel movement. The Current Licensing Basis only requires the interlocks associated with the refuel position, not those associated with other positions of the reactor mode switch, and only when the reactor mode switch is in the refuel position, not when it is in the shutdown position. Therefore, to avoid confusion, the LCO and Applicability have been modified to specifically state that the refueling interlocks are those associated with the refuel position, and that it is applicable when the reactor mode switch is in the refuel position. This change is also consistent with TSTF-232.

2. The brackets have been removed and the proper plant specific information/value has been provided.

<CTS>

3.9 REFUELING OPERATIONS

3.9.2 Refuel Position One-Rod-Out Interlock

<3.10.A.1> LCO 3.9.2 The refuel position one-rod-out interlock shall be OPERABLE.

<3.10.A>
<3.10.A.1>
<Appl 3.10.A>
APPLICABILITY: MODE 5 with the reactor mode switch in the refuel position and any control rod withdrawn.

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.10.A Act 1> <3.10.A Act 2>	A. Refuel position one-rod-out interlock inoperable.	A.1 Suspend control rod withdrawal. AND A.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
<4.10.A.1>	SR 3.9.2.1	Verify reactor mode switch locked in Refuel position.	12 hours

(continued)

<CTS>

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
<4.10.A.2> SR 3.9.2.2	------------------NOTE------------------ Not required to be performed until 1 hour after any control rod is withdrawn. -- Perform CHANNEL FUNCTIONAL TEST.	7 days

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.9.2 - REFUELING POSITION ONE-ROD-OUT INTERLOCK

There are no deviations from NUREG-1433, Rev. 1 for this Specification.

<CTS>

3.9 REFUELING OPERATIONS

3.9.3 Control Rod Position

<3.10.C> LCO 3.9.3 All control rods shall be fully inserted.

<Appl 3.10.C> APPLICABILITY: When loading fuel assemblies into the core.

ACTIONS

<3.10.C Act>

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more control rods not fully inserted.	A.1 Suspend loading fuel assemblies into the core.	Immediately

SURVEILLANCE REQUIREMENTS

<4.10.C>

SURVEILLANCE		FREQUENCY
SR 3.9.3.1	Verify all control rods are fully inserted.	12 hours

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.9.3 - CONTROL ROD POSITION

There were no deviations from NUREG-1433, Rev. 1, for this Specification.

<CTS>

3.9 REFUELING OPERATIONS

3.9.4 Control Rod Position Indication

<3.3.I> LCO 3.9.4 The control rod "full-in" position indication channel for each control rod shall be OPERABLE.

<App/3.3.I> APPLICABILITY: MODE 5.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each required channel. 1

CONDITION	REQUIRED ACTION	COMPLETION TIME
1 <3.3.I Act 3> A. One or more required control rod position indication channels inoperable.	A.1.1 Suspend in vessel fuel movement.	Immediately
	AND	
	A.1.2 Suspend control rod withdrawal.	Immediately
	AND	
	A.1.3 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately
	OR	
		(continued)

<CTS>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.3.I Act 3> A. (continued)	A.2.1 Initiate action to fully insert the control rod associated with the inoperable position indicator. AND A.2.2 Initiate action to disarm the control rod drive associated with the fully inserted control rod.	Immediately Immediately

SURVEILLANCE REQUIREMENT

SURVEILLANCE	FREQUENCY
1 <4.3.I> SR 3.9.4.1 Verify the required channel has no "full-in" indication on each control rod that is not "full-in."	Each time the control rod is withdrawn from the "full-in" position

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.9.4 - CONTROL ROD POSITION INDICATION

1. The Dresden 2 and 3 design includes only one "full-in" position indicator channel for each control rod, therefore, all "full-in" channels are required, thus the word "required" has been deleted from the ACTIONS Note, Condition A and the Surveillance.

<CTS>

3.9 REFUELING OPERATIONS

3.9.5 Control Rod OPERABILITY—Refueling

<3.3.G> LCO 3.9.5 Each withdrawn control rod shall be OPERABLE.

<Appl 3.3.G> APPLICABILITY: MODE 5.

ACTIONS

<3.3.G Act 2.a>
<DOC M.1>

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

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
<DOC M.1> SR 3.9.5.1	-------------------NOTE------------------- Not required to be performed until 7 days after the control rod is withdrawn. -- Insert each withdrawn control rod at least one notch.	7 days
<4.3.G> SR 3.9.5.2	Verify each withdrawn control rod scram accumulator pressure is ≥ [940] psig.	7 days — 1

1. The brackets have been removed and the proper plant specific information/value has been provided.

<CTS>

3.9 REFUELING OPERATIONS

3.9.6 [Reactor Pressure Vessel (RPV)] Water Level [—Irradiated Fuel] 1

<3.10.G> LCO 3.9.6 [RPV] water level shall be ≥ [23] ft above the top of the [RPV flange].

<Appl 3.10.G> APPLICABILITY: During movement of irradiated fuel assemblies within the [RPV],
~~During movement of new fuel assemblies or handling of control rods within the [RPV], when irradiated fuel assemblies are seated within the [RPV]~~ 2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
1 <3.10.G Act> A. [RPV] water level not within limit.	A.1 Suspend movement of irradiated 2 fuel assemblies ~~[and handling of control rods]~~ within the [RPV]. 1	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<4.10.G> 1 SR 3.9.6.1 Verify [RPV] water level is ≥ [23] ft above the top of the [RPV flange].	24 hours

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.9.6 - RPV WATER LEVEL — IRRADIATED FUEL

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. The Applicability and Required Action have been deleted/modified from ITS 3.9.6 since they are covered by ITS 3.9.7 (Dresden 2 and 3 has chosen the option to have two different LCOs; one for the movement of irradiated fuel and the other for the movement of new fuel or control rods).

All changes are [1] unless otherwise identified.

<CTS>

3.9 REFUELING OPERATIONS

3.9.7 Reactor Pressure Vessel (RPV) Water Level—New Fuel or Control Rods

<3.10.G>

LCO 3.9.7 RPV water level shall be ≥ 23 ft above the top of irradiated fuel assemblies seated within the RPV.

<Appl 3.10.G>

APPLICABILITY: During movement of new fuel assemblies or handling of control rods within the RPV, when irradiated fuel assemblies are seated within the RPV.

ACTIONS

<3.10.G Act>

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RPV water level not within limit.	A.1 (new) Suspend movement of fuel assemblies and handling of control rods within the RPV.	Immediately

SURVEILLANCE REQUIREMENTS

<4.10.G>

SURVEILLANCE	FREQUENCY
SR 3.9.7.1 Verify RPV water level is ≥ 23 ft above the top of irradiated fuel assemblies seated within the RPV.	24 hours

[2]

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.9.7 - RPV WATER LEVEL — NEW FUEL OR CONTROL RODS

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. Typographical error corrected.

<CTS>

3.9 REFUELING OPERATIONS

3.9.8 ~~Residual Heat Removal (RHR)~~ Shutdown Cooling (SDC)—High Water Level

1 SDC

<3.10.K> LCO 3.9.8 One ~~RHR/shutdown cooling~~ SDC subsystem shall be OPERABLE and in operation.

---NOTE---
The required ~~RHR/shutdown cooling~~ SDC subsystem may ~~be removed from~~ be not in operation for up to 2 hours per 8 hour period. 4 TSTF-153

<Appl 3.10.K> 2 APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel ~~(RPV)~~ RPV and the water level ≥ ~~[~~23~~]~~ ft above the top of the ~~[~~RPV flange~~]~~. 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.10.K Act 1> 1 SDC A. Required ~~RHR/shutdown cooling~~ SDC subsystem inoperable.	A.1 Verify an alternate method of decay heat removal is available.	1 hour AND Once per 24 hours thereafter
<3.10.K Act 1> B. Required Action and associated Completion Time of Condition A not met.	B.1 Suspend loading irradiated fuel assemblies into the RPV. AND	Immediately

(continued)

<CTS>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.10.K Act 1> B. (continued) 3	B.2 Initiate action to restore [secondary] containment to OPERABLE status.	Immediately
	AND	
	B.3 Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	AND	
	B.4 Initiate action to restore isolation capability in each required [secondary] containment penetration flow path not isolated.	Immediately 3
1 SDC <3.10.K Act 2> C. No ~~RHR~~ ~~shutdown~~ ~~cooling~~ subsystem in operation.	C.1 Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation AND Once per 12 hours thereafter
	AND	
	C.2 Monitor reactor coolant temperature.	Once per hour

2 ~~SURVEILLANCE REQUIREMENTS~~

<CTS>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
1 SDC <4.10.K> SR 3.9.8.1	Verify one RHR shutdown cooling subsystem is operating.	12 hours

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.9.8 - SHUTDOWN COOLING (SDC) – HIGH WATER LEVEL

1. The proper Dresden 2 and 3 plant specific nomenclature/value has been provided.

2. Typographical/grammatical error corrected.

3. The brackets have been removed and the proper plant specific information/value has been provided.

4. TSTF-153 revised the RHR - High Water Level LCO (ISTS LCO 3.9.8) Note, which provides an exception to the requirement for the required pump to be in operation, to provide a clarification of the intent of the Note consistent with the requirement being excepted. The justification for TSTF-153 described that the change was necessary to eliminate ambiguity that could lead to errors or improper enforcement. However, the change can now lead to a misinterpretation of the allowance of the Note. Specifically, the Note can now be interpreted as <u>requiring</u> the required subsystem or pump to not be in operation for up to 2 hours per 8 hour period, i.e., it must be taken out of operation. The intent of the Note (as described in the associated Bases) is to <u>allow (but not require)</u> the required subsystem or pump to not be in operation for up to 2 hours per 8 hour period. Therefore, the Note is revised to allow the subsystem or pump to be "not in operation" for up to 2 hours per 8 hour period.

SDC 1

RHR—Low Water Level
3.9.9

<CTS>

3.9 REFUELING OPERATIONS

Shutdown Cooling (SDC)

3.9.9 ~~Residual Heat Removal (RHR)~~—Low Water Level

<3.10.L> 1 SDC

LCO 3.9.9 Two ~~RHR/shutdown cooling~~ subsystems shall be OPERABLE, and one ~~RHR shutdown/cooling~~ subsystem shall be in operation.

4 TSTF-153

-----------------------------NOTE-----------------------------
The required operating shutdown cooling subsystem may ~~be removed from~~ be not in operation for up to 2 hours per 8 hour period.

<Appl 3.10.L> APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level < [23] ft above the top of the [RPV flange]. 2

ACTIONS

3

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.10.L Act 1> 3 1 SDC A. One or two required ~~RHR shutdown cooling~~ subsystems inoperable.	A.1 Verify an alternate method of decay heat removal is available for ~~each~~ the inoperable required ~~RHR/shutdown cooling~~ SDC subsystem.	1 hour AND Once per 24 hours thereafter
<Doc M.1> B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action to restore [secondary] containment to OPERABLE status. AND	Immediately 2 (continued)

- - - - NOTE - - - - -
Separate Condition entry is allowed for each inoperable SDC subsystem
- - - - - - - - - - - -

<CTS>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<DOC M.1> B. (continued)	B.2 Initiate action to restore one standby gas treatment subsystem to OPERABLE status. AND B.3 Initiate action to restore isolation capability in each required [secondary] containment penetration flow path not isolated.	Immediately Immediately 2
1 SDC <3.10.L Act 2> C. No ~~RHR shutdown cooling~~ subsystem in operation.	C.1 Verify reactor coolant circulation by an alternate method. AND C.2 Monitor reactor coolant temperature.	1 hour from discovery of no reactor coolant circulation AND Once per 12 hours thereafter Once per hour

<CTS>

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
1 <4.10.L> SR 3.9.9.1	Verify one SDC ~~RHR shutdown cooling~~ subsystem is operating.	12 hours

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.9.9 - SHUTDOWN COOLING (SDC) - LOW WATER LEVEL

1. The proper Dresden 2 and 3 plant specific nomenclature/value has been provided.

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. Condition A has been modified by the addition of a Note that allows separate Condition entry for each inoperable shutdown cooling subsystem. Currently, the Condition is required to be entered if one or two required shutdown cooling subsystems are inoperable. The Required Actions require the verification of an alternate method of decay heat removal for each inoperable required shutdown cooling subsystem within 1 hour and every 24 hours thereafter. According to ITS 1.3, Completion Times, when one required shutdown cooling subsystem is inoperable, entry into the Condition is required and the Completion Times start upon entry into the Condition. When the second required shutdown cooling subsystem becomes inoperable, a new Condition entry is not allowed; the Completion Times from the initial entry are still applicable. Thus, if the second required shutdown cooling subsystem becomes inoperable more than 1 hour after the first subsystem, no time is provided to verify a second alternate method; the time has already expired. The CTS does not have this restriction. Dresden 2 and 3 enter CTS 3.10.L Action 1 each time a required shutdown cooling subsystem becomes inoperable, and take the actions required by CTS 3.10.L Action 1 independently for each required subsystem. Therefore, to maintain consistency with the CTS requirements, the Note to Condition A has been added to allow separate Condition entry for each inoperable required shutdown cooling subsystem. In addition, the Required Action has been modified to be applicable to the associated required shutdown cooling subsystem (by changing the word "each" to "the").

4. TSTF-153 revised the RHR - Low Water Level LCO (ISTS LCO 3.9.9) Note, which provides an exception to the requirement for the required pump to be in operation, to provide a clarification of the intent of the Note consistent with the requirement being excepted. The justification for TSTF-153 described that the change was necessary to eliminate ambiguity that could lead to errors or improper enforcement. However, the change can now lead to a misinterpretation of the allowance of the Note. Specifically, the Note can now be interpreted as <u>requiring</u> the required subsystems or pumps to not be in operation for up to 2 hours per 8 hour period, i.e., they must be taken out of operation. The intent of the Note (as described in the associated Bases) is to <u>allow (but not require)</u> the required subsystems or pumps to not be in operation for up to 2 hours per 8 hour period. Therefore, the Note is revised to allow the subsystems or pumps to be "not in operation" for up to 2 hours per 8 hour period.

B 3.9 REFUELING OPERATIONS

B 3.9.1 Refueling Equipment Interlocks

BASES

BACKGROUND

Refueling equipment interlocks restrict the operation of the refueling equipment or the withdrawal of control rods to reinforce unit procedures that prevent the reactor from achieving criticality during refueling. The refueling interlock circuitry senses the conditions of the refueling equipment and the control rods. Depending on the sensed conditions, interlocks are actuated to prevent the operation of the refueling equipment or the withdrawal of control rods.

1 UFSAR, Section 3.1.2.3.7

GDC 26 of 10 CFR 50, Appendix A, requires that one of the two required independent reactivity control systems be capable of holding the reactor core subcritical under cold conditions (Ref. 1). The control rods, when fully inserted, serve as the system capable of maintaining the reactor subcritical in cold conditions during all fuel movement activities and accidents.

are
s
Two

One channel of instrumentation is provided to sense the position of the refueling platform, the loading of the refueling platform fuel grapple, and the full insertion of all control rods. Additionally, inputs are provided for the loading of the refueling platform frame mounted hoist, the loading of the refueling platform monorail mounted hoist, the full retraction of the fuel grapple, and the loading of the service platform hoist. With the reactor mode switch in the shutdown or refueling position, the indicated conditions are combined in logic circuits to determine if all restrictions on refueling equipment operations and control rod insertion are satisfied. 1

main hoist

trolley

A control rod not at its full-in position interrupts power to the refueling equipment and prevents operating the equipment over the reactor core when loaded with a fuel assembly. Conversely, the refueling equipment located over the core and loaded with fuel inserts a control rod withdrawal block in the Control Rod Drive System to prevent withdrawing a control rod. to 2

Reactor Manual Control 1

The refueling platform has two mechanical switches that open before the platform or any of its hoists are physically

(continued)

BASES

Insert BKGD-1 1

BACKGROUND (continued)

located over the reactor vessel. ~~All refueling hoists have switches that open when the hoists are loaded with fuel.~~

The refueling interlocks use these indications to prevent operation of the refueling equipment with fuel loaded over the core whenever any control rod is withdrawn, or to prevent control rod withdrawal whenever fuel loaded refueling equipment is over the core (Ref. 2).

2 ~~The hoist switches open~~ at a load lighter than the weight of a single fuel assembly in water. 1

APPLICABLE SAFETY ANALYSES

The refueling interlocks are explicitly assumed in the FSAR analyses for the control rod removal error during refueling (Ref. 3) ~~and the fuel assembly insertion error during refueling (Ref. 4)~~. These analyses evaluate the consequences of control rod withdrawal during refueling ~~and also fuel assembly insertion with a control rod withdrawn~~. A prompt reactivity excursion during refueling could potentially result in fuel failure with subsequent release of radioactive material to the environment.

i U i 5 is

Criticality and, therefore, subsequent prompt reactivity excursions are prevented during the insertion of fuel, provided all control rods are fully inserted during the fuel insertion. The refueling interlocks accomplish this by preventing loading of fuel into the core with any control rod withdrawn or by preventing withdrawal of a rod from the core during fuel loading.

1 The refueling platform location switches activate at a point outside of the reactor core such that, ~~considering switch hysteresis and maximum platform momentum toward the core at the time of power loss~~ with a fuel assembly loaded and a control rod withdrawn, the fuel is not over the core.

5

Refueling equipment interlocks satisfy Criterion 3 of ~~the NRC Policy Statement~~ 10 CFR 50.36(c)(2)(ii). 1

LCO

To prevent criticality during refueling, the refueling interlocks associated with the reactor mode switch refuel position ensure that fuel assemblies are not loaded into the core with any control rod withdrawn.

3 2

(continued)

1 INSERT BKGD-1

Each hoist load is sensed by an electronic load cell. The service platform uses relay logic to perform the interlock and load functions. The fuel grapple main hoist load signals input via a signal conditioning unit (SCU) to a programmable logic controller (PLC). The PLC performs the associated interlock and load functions. The monorail and frame-mounted hoist load cells input via SCUs to electronic setpoint modules that perform their associated interlock and load functions. The PLC opens the associated fuel-loaded circuits at a load lighter than the combined weight of a single fuel assembly and inner-most mast section assembly in water. The electronic setpoint modules open the associated fuel-loaded circuits

BASES

LCO (continued)

To prevent these conditions from developing, the all-rods-in, the refueling platform position, the refueling platform fuel grapple fuel loaded, the refueling platform trolley frame mounted hoist fuel loaded, the refueling platform monorail mounted hoist fuel loaded, the refueling platform fuel grapple fully retracted position, and the service platform hoist fuel loaded inputs are required to be OPERABLE when the associated equipment is in use for in-vessel fuel movement. These inputs are combined in logic circuits, which provide refueling equipment or control rod blocks to prevent operations that could result in criticality during refueling operations. [2]

APPLICABILITY

In MODE 5, a prompt reactivity excursion could cause fuel damage and subsequent release of radioactive material to the environment. The refueling equipment interlocks protect against prompt reactivity excursions during MODE 5. The interlocks are required to be OPERABLE during in-vessel fuel movement with refueling equipment associated with the interlocks. Insert APP [3]

In MODES 1, 2, 3, and 4, the reactor pressure vessel head is on, and CORE ALTERATIONS are not possible. Therefore, the refueling interlocks are not required to be OPERABLE in these MODES.

ACTIONS

A.1, A.2.1, and A.2.2 TSTF-225

TSTF-225 and 2

With one or more of the required refueling equipment interlocks inoperable (does not include the one-rod-out interlock addressed in LCO 3.9.2), the unit must be placed Insert ACTION A.1a in a condition in which the LCO does not apply. In-vessel fuel movement with the affected refueling equipment must be immediately suspended. This action ensures that operations are not performed with equipment that would potentially not be blocked from unacceptable operations (e.g., loading fuel into a cell with a control rod withdrawn).

TSTF-225 Suspension of in-vessel fuel movement shall not preclude completion of movement of a component to a safe position. Insert ACTION A.1b

(continued)

3 INSERT APP

when the reactor mode switch is in the refuel position. The interlocks are not required when the reactor mode switch is in the shutdown position since a control rod block (LCO 3.3.2.1, "Control Rod Block Instrumentation") ensures control rod withdrawals can not occur simultaneously with in-vessel fuel movements

TSTF-225 INSERT ACTION A.1.a

or is not necessary. This can be performed by ensuring fuel assemblies are not moved in the reactor vessel or by ensuring that the control rods are inserted and cannot be withdrawn. Therefore, Required Action A.1 requires that 2

TSTF-225 INSERT ACTION A.1.b

Alternately, Required Actions A.2.1 and A.2.2 require that a control rod withdrawal block be inserted and that all control rods are subsequently verified to be fully inserted in core cells containing one or more fuel assemblies. Required Action A.2.1 ensures that no control rods can be withdrawn. This action ensures that control rods cannot be inappropriately withdrawn since an electrical or hydraulic block to control rod withdrawal is in place. Required Action A.2.2 is normally performed after placing the rod withdrawal block in effect and provides a verification that all control rods in core cells containing one or more fuel assemblies are fully inserted. Like Required Action A.1, Required Actions A.2.1 and A.2.2 ensure that unacceptable operations are prohibited (e.g., loading fuel into a core cell with the control rod withdrawn). 2 2

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.9.1.1

Performance of a CHANNEL FUNCTIONAL TEST demonstrates each required refueling equipment interlock will function properly when a simulated or actual signal indicative of a required condition is injected into the logic. The CHANNEL FUNCTIONAL TEST may be performed by any series of sequential, overlapping, or total channel steps so that the entire channel is tested.

The 7 day Frequency is based on engineering judgment and is considered adequate in view of other indications of refueling interlocks and their associated input status that are available to unit operations personnel.

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 26~~. UFSAR, Section 3.1.2.3.7 [1]
2. UFSAR, Section ~~[7.6.1]~~ 7.7.1.2.2. [4] [1]
3. UFSAR, Section ~~[15.1.13]~~ 15.4.1.
4. ~~FSAR, Section [15.1.14].~~

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.9.1 - REFUELING EQUIPMENT INTERLOCKS

1. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

2. Editorial change made for enhanced clarity or to be consistent with similar statements in other places in the Bases.

3. Changes have been made to reflect those changes made to the Specification.

4. The brackets have been removed and the proper plant specific information/value has been provided.

B 3.9 REFUELING OPERATIONS

B 3.9.2 Refuel Position One-Rod-Out Interlock

BASES

BACKGROUND

The refuel position one-rod-out interlock restricts the movement of control rods to reinforce unit 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.

1 UFSAR, Section 3.1.2.3.7 ~~GDC 26 of 10 CFR 50, Appendix A~~ requires that one of the two required independent reactivity control systems be capable of holding the reactor core subcritical under cold conditions (Ref. 1). The control rods serve as the system capable of maintaining the reactor subcritical in cold conditions.

The refuel position one-rod-out interlock prevents the selection of a second control rod for movement when any other control rod is not fully inserted (Ref. 2). It is a logic circuit that has redundant channels. It uses the all-rods-in signal (from the control rod full-in position indicators discussed in LCO 3.9.4, "Control Rod Position Indication") and a rod selection signal (from the Reactor Manual Control System).

This Specification ensures that the performance of the refuel position one-rod-out interlock in the event of a Design Basis Accident meets the assumptions used in the safety analysis of Reference 3.

APPLICABLE SAFETY ANALYSES

1 (U) The refueling position one-rod-out interlock is explicitly assumed in the UFSAR analysis for the control rod ~~withdrawal~~ removal 1 error during refueling (Ref. 3). This analysis evaluates the consequences of control rod withdrawal during refueling. A prompt reactivity excursion during refueling could potentially result in fuel failure with subsequent release of radioactive material to the environment.

The refuel position one-rod-out interlock and adequate SDM (LCO 3.1.1, "SHUTDOWN MARGIN (SDM)") prevent criticality by 3 preventing withdrawal of more than one control rod. With

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

one control rod withdrawn, the core will remain subcritical, thereby preventing any prompt critical excursion.

The refuel position one-rod-out interlock satisfies Criterion 3 of ~~the NRC Policy Statement~~. (10 CFR 50.36(c)(2)(ii)) 1

LCO

To prevent criticality during MODE 5, the refuel position one-rod-out interlock ensures no more than one control rod may be withdrawn. Both channels of the refuel position one-rod-out interlock are required to be OPERABLE and the reactor mode switch must be locked in the refuel position to support the OPERABILITY of these channels.

APPLICABILITY

In MODE 5, with the reactor mode switch in the refuel position, the OPERABLE refuel position one-rod-out interlock provides protection against prompt reactivity excursions.

In MODES 1, 2, 3, and 4, the refuel position one-rod-out interlock is not required to be OPERABLE and is bypassed. In MODES 1 and 2, the Reactor Protection System (LCO 3.3.1.1) , "Reactor Protection System (RPS) Instrumentation" 2 and the control rods (LCO 3.1.3) , "Control Rod OPERABILITY" 2 provide mitigation of potential reactivity excursions. In MODES 3 ~~and 4,~~ 5 with the reactor mode switch in the shutdown position, a control rod block (LCO 3.3.2.1) , "Control Rod Block Instrumentation" ensures all control rods are inserted, thereby preventing criticality during shutdown conditions.

ACTIONS

A.1 and A.2

With ~~one or both channels of~~ 5 the refueling position one-rod-out interlock inoperable, the refueling interlocks may not be capable of preventing more than one control rod from being withdrawn. This condition may lead to criticality.

Control rod withdrawal must be immediately suspended, and action must be immediately initiated to fully insert all insertable control rods in core cells containing one or more

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

fuel assemblies. Action must continue until all such control rods are fully inserted. Control rods in core cells containing no fuel assemblies do not affect the reactivity of the core and, therefore, do not have to be inserted.

SURVEILLANCE REQUIREMENTS

SR 3.9.2.1

Proper functioning of the refueling position one-rod-out interlock requires the reactor mode switch to be in Refuel. During control rod withdrawal in MODE 5, improper positioning of the reactor mode switch could, in some instances, allow improper bypassing of required interlocks. Therefore, this Surveillance imposes an additional level of assurance that the refueling position one-rod-out interlock will be OPERABLE when required. By "locking" the reactor mode switch in the proper position (i.e., removing the reactor mode switch key from the console while the reactor mode switch is positioned in refuel), an additional administrative control is in place to preclude operator errors from resulting in unanalyzed operation.

The Frequency of 12 hours is sufficient in view of other administrative controls utilized during refueling operations to ensure safe operation.

SR 3.9.2.2

Performance of a CHANNEL FUNCTIONAL TEST on each channel demonstrates the associated refuel position one-rod-out interlock will function properly when a simulated or actual signal indicative of a required condition is injected into the logic. The CHANNEL FUNCTIONAL TEST may be performed by any series of sequential, overlapping, or total channel steps so that the entire channel is tested. The 7 day Frequency is considered adequate because of demonstrated circuit reliability, procedural controls on control rod withdrawals, and visual and audible indications available in the control room to alert the operator to control rods not fully inserted. To perform the required testing, the applicable condition must be entered (i.e., a control rod 1

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.9.2.2 (continued)

3 2 must be withdrawn from its full-in position). Therefore, SR 3.9.2.1 has been modified by a Note that states the CHANNEL FUNCTIONAL TEST is not required to be performed until 1 hour after any control rod is withdrawn.

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 26~~. UFSAR, Section 3.1.2.3.7 1
1 U
2. FSAR, Section ~~7.6.1.1~~. 7.7.1.2.2 4
3. FSAR, Section 15.4.1.

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.9.2 - REFUEL POSITION ONE-ROD-OUT INTERLOCK

1. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

2. Editorial change made for enhanced clarity or to be consistent with the Writer's Guide.

3. Typographical/grammatical error corrected.

4. The brackets have been removed and the proper plant specific information/value has been provided.

5. Changes have been made to be consistent with the requirements in the Specification.

B 3.9 REFUELING OPERATIONS

B 3.9.3 Control Rod Position

BASES

BACKGROUND

Control rods provide the capability to maintain the reactor subcritical under all conditions and to limit the potential amount and rate of reactivity increase caused by a malfunction in the Control Rod Drive System. During refueling, movement of control rods is limited by the refueling interlocks (LCO 3.9.1 and LCO 3.9.2) or the control rod block with the reactor mode switch in the shutdown position (LCO 3.3.2.1).

1 , "Refueling Equipment Interlocks"
1 , "Refuel Position One-Rod-Out Interlock"
1 , "Control Rod Block Instrumentation"

~~GDC 26 of 10 CFR 50, Appendix A~~ requires that one of the two required independent reactivity control systems be capable of holding the reactor core subcritical under cold conditions (Ref. 1). The control rods serve as the system capable of maintaining the reactor subcritical in cold conditions.

2 UFSAR, Section 3.1.2.3.7

The refueling interlocks allow a single control rod to be withdrawn at any time unless fuel is being loaded into the core. To preclude loading fuel assemblies into the core with a control rod withdrawn, all control rods must be fully inserted. This prevents the reactor from achieving criticality during refueling operations.

APPLICABLE SAFETY ANALYSES

Prevention and mitigation of prompt reactivity excursions during refueling are provided by the refueling interlocks (LCO 3.9.1 and LCO 3.9.2), the SDM (LCO 3.1.1), the intermediate range monitor neutron flux scram (LCO 3.3.1.1), ~~the average power range monitor neutron flux scram (LCO 3.3.1.1),~~ and the control rod block instrumentation (LCO 3.3.2.1).

1 , "Shutdown Margin (SDM)"
1 , "Reactor Protection System (RPS) Instrumentation"
3

The safety analysis for the control rod ~~withdrawal~~ removal error during refueling in the FSAR (Ref. 2) assumes the functioning of the refueling interlocks and adequate SDM. ~~The analysis for the fuel assembly insertion error (Ref. 3) assumes all control rods are fully inserted.~~ Thus, prior to fuel reload, all control rods must be fully inserted to minimize the probability of an inadvertent criticality.

2 U

2

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

Control rod position satisfies Criterion 3 of ~~the NRC Policy Statement~~. 10 CFR 50.36(c)(2)(ii) 2

LCO

All control rods must be fully inserted during applicable refueling conditions to minimize the probability of an inadvertent criticality during refueling.

APPLICABILITY

During MODE 5, loading fuel into core cells with control rods withdrawn may result in inadvertent criticality. Therefore, the control rods must be inserted before loading fuel into a core cell. All control rods must be inserted before loading fuel to ensure that a fuel loading error does not result in loading fuel into a core cell with the control rod withdrawn.

In MODES 1, 2, 3, and 4, the reactor pressure vessel head is on, and no fuel loading activities are possible. Therefore, this Specification is not applicable in these MODES.

ACTIONS

A.1

With all control rods not fully inserted during the applicable conditions, an inadvertent criticality could occur that is not analyzed in the FSAR. All fuel loading operations must be immediately suspended. Suspension of these activities shall not preclude completion of movement of a component to a safe position. (4) 2

SURVEILLANCE REQUIREMENTS

SR 3.9.3.1

During refueling, to ensure that the reactor remains subcritical, all control rods must be fully inserted prior to and during fuel loading. Periodic checks of the control rod position ensure this condition is maintained.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.9.3.1 (continued)

The 12 hour Frequency takes into consideration the procedural controls on control rod movement during refueling as well as the redundant functions of the refueling interlocks.

REFERENCES

1. ~~[10 CFR 50, Appendix A, GDC 26]~~. UFSAR, Section 3.1.2.3.7 [2]
2. [2] UFSAR, Section ~~[15.1.13]~~ 15.4.1. [4]
3. ~~FSAR, Section [15.1.14].~~

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.9.3 - CONTROL ROD POSITION

1. Editorial change made to be consistent with the Writer's Guide.

2. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

3. The APRM neutron flux scram is not required to be OPERABLE while in MODE 5, therefore reference to it has been deleted.

4. The brackets have been removed and the proper plant specific information/value has been provided.

B 3.9 REFUELING OPERATIONS

B 3.9.4 Control Rod Position Indication

BASES

BACKGROUND

The full-in position indication channel for each control rod provides necessary information to the refueling interlocks to prevent inadvertent criticalities during refueling operations. During refueling, the refueling interlocks (LCO 3.9.1 , "Refueling Equipment Interlocks" [2] and LCO 3.9.2 , "Refuel Position One-Rod-Out Interlock" [2]) use the full-in position indication channel to limit the operation of the refueling equipment and the movement of the control rods. Insert BKGD [3] The absence of the full-in position indication [1] channel signal for any control rod removes the all-rods-in permissive for the refueling equipment interlocks and prevents fuel loading. Also, this condition causes the refuel position one-rod-out interlock to not allow the ~~withdrawal~~ selection [3] of any other control rod. The all-rods-in logic provides two signals, one to each of the two Reactor Manual Control System rod block logic circuits. [2]

~~GDC 26 of 10 CFR 50, Appendix A,~~ UFSAR, Section 3.1.2.3.7 [3] requires that one of the two required independent reactivity control systems be capable of holding the reactor core subcritical under cold conditions (Ref. 1). The control rods serve as the system capable of maintaining the reactor subcritical in cold conditions.

APPLICABLE SAFETY ANALYSES

Prevention and mitigation of prompt reactivity excursions during refueling are provided by the refueling interlocks (LCO 3.9.1 and LCO 3.9.2), the SDM (LCO 3.1.1, "SHUTDOWN MARGIN (SDM)" [2]), the intermediate range monitor neutron flux scram (LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation" [2]), and the control rod block instrumentation (LCO 3.3.2.1, "Control Rod Block Instrumentation" [2]).

The safety analysis for the control rod ~~withdrawal~~ removal [3] error during refueling (Ref. 2) assumes the functioning of the refueling interlocks and adequate SDM. ~~The analysis for the fuel assembly insertion error (Ref. 3) assumes all control rods are fully inserted.~~ [1] The full-in position indication channel is required to be OPERABLE so that the refueling interlocks can ensure that fuel cannot be loaded with any control rod withdrawn and that no more than one control rod can be withdrawn at a time.

(continued)

3 Insert BKGD

Two full-in position indication switches (S51 and S52) provide input to the all-rods-in logic for each control rod. Switch S51 provides full core display beyond full-in (scram) position indication (green dashes - no readout) and switch S52 provides full core display normal green full-in position indication. Switch S52 is set slightly beyond switch S00, which provides the digital "00" full-in position readout (switch S00 does not provide input to the all-rods-in logic and is not considered a full-in channel). When switch S52 is actuated, the color of the full core display "00" readout is changed from amber to green, indicating the control rod is full-in and latched. Switches S51 and S52 are wired in parallel, such that, if either switch indicates full-in, the all-rods-in logic will receive a full-in signal for that control rod. Therefore, each control rod is considered to have only one "full-in" position indication channel.

BASES

APPLICABLE SAFETY ANALYSES (continued)

Control rod position indication satisfies Criterion 3 of ~~the NRC Policy Statement~~. 3 (10 CFR 50.36 (c)(2)(ii))

LCO

5 (The) ~~Each~~ control rod full-in position indication channel (for each control rod) 5 must be OPERABLE to provide the required input to the refueling 3 (equipment) interlocks. A channel is OPERABLE if it provides correct position indication to the refueling (all-rods-in) interlock logic (LCO 3.9.1) and the refuel position one-rod-out interlock logic (LCO 3.9.2) 3.

APPLICABILITY

During MODE 5, the control rods must have OPERABLE full-in position indication channels to ensure the applicable refueling interlocks will be OPERABLE.

In MODES 1 and 2, requirements for control rod position are specified in LCO 3.1.3, "Control Rod OPERABILITY." In MODES 3 and 4, with the reactor mode switch in the shutdown position, a control rod block (LCO 3.3.2.1) ensures all control rods are inserted, thereby preventing criticality during shutdown conditions.

ACTIONS

A Note has been provided to modify the ACTIONS related to control rod position indication channels. 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 inoperable control rod position indication channels provide appropriate compensatory measures for separate inoperable channels. As such, this Note has been provided, which allows separate Condition entry for each inoperable ~~required~~ 1 control rod position indication channel.

(continued)

BASES

ACTIONS (continued)

A.1.1, A.1.2, A.1.3, A.2.1 and A.2.2 [1]

With one or more ~~required~~ full-in position indication channels inoperable, compensating actions must be taken to protect against potential reactivity excursions from fuel assembly insertions or control rod withdrawals. This may be accomplished by immediately suspending in-vessel fuel movement and control rod withdrawal, and immediately initiating action to fully insert all insertable control rods in core cells containing one or more fuel assemblies. Actions must continue until all insertable control rods in core cells containing one or more fuel assemblies are fully inserted. Control rods in core cells containing no fuel assemblies do not affect the reactivity of the core and, therefore, do not have to be inserted. [2] Suspension of in-vessel fuel movements and control rod withdrawal shall not preclude moving a component to a safe position.

Alternatively, actions must be immediately initiated to fully insert the control rod(s) associated with the inoperable full-in position indicator(s) and disarm (electrically or hydraulically) [2] the drive(s) to ensure that the control rod is not withdrawn. A control rod can be hydraulically disarmed by closing the drive water and exhaust water isolation valves. A control rod can be electrically disarmed by disconnecting power from all four directional control valve solenoids. [2] Actions must continue until all associated control rods are fully inserted and drives are disarmed. Under these conditions (control rod fully inserted and disarmed), an inoperable full-in channel may be bypassed to allow refueling operations to proceed. An alternate method must be used to ensure the control rod is fully inserted (e.g., use the "00" notch position indication).

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1

The full-in position indication channels provide input to the one-rod-out interlock and other refueling interlocks that require an all-rods-in permissive. The interlocks are actuated when the full-in position indication for any control rod is not present, since this indicates that all rods are not fully inserted. Therefore, testing of the full-in position indication channels is performed to ensure that when a control rod is withdrawn, the full-in position indication is not present. [2] Insert SR 3.9.4.1 The full-in position indication channel is considered inoperable even with the control rod fully inserted, if it would continue to indicate full-in with the control rod withdrawn. Performing the SR each time a control rod is withdrawn from the full-in position [2] is considered adequate because of

(continued)

$\boxed{2}$ INSERT SR 3.9.4.1

This is performed by verifying the absence of full-in position indication (green dashes or green "00") at the full core display digital display module, when the control rod is not full-in.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1 (continued)

3

the procedural controls on control rod withdrawals and the visual ~~and audible~~ indications available in the control room to alert the operator to control rods not fully inserted.

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 26~~. UFSAR, Section 3.1.2.3.7 3
2. uFSAR, Section ~~[15.1.13]~~. 15.4.1 4
3. ~~3. FSAR, Section [15.1.14].~~ 3

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.9.4 - CONTROL ROD POSITION INDICATION

1. Changes have been made to reflect those changes made to the Specification.

2. Editorial change made for enhanced clarity or to be consistent with the Writer's Guide or similar statements in other places in the Bases.

3. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

4. The brackets have been removed and the proper plant specific information/value has been provided.

5. Changes have been made to more closely reflect the Specification.

B 3.9 REFUELING OPERATIONS

B 3.9.5 Control Rod OPERABILITY—Refueling

BASES

BACKGROUND

Control rods are components of the Control Rod Drive (CRD) System, the primary reactivity control system for the reactor. In conjunction with the Reactor Protection System, the CRD System provides the means for the reliable control of reactivity changes during refueling operation. In addition, the control rods provide the capability to maintain the reactor subcritical under all conditions and to limit the potential amount and rate of reactivity increase caused by a malfunction in the CRD System.

[1] UFSAR, Section 3.1.2.3.7 ~~GDC 26 of 10 CFR 50, Appendix A~~ requires that one of the two required independent reactivity control systems be capable of holding the reactor core subcritical under cold conditions (Ref. 1). The CRD System is the system capable of maintaining the reactor subcritical in cold conditions.

APPLICABLE SAFETY ANALYSES

Prevention and mitigation of prompt reactivity excursions during refueling are provided by refueling interlocks ~~(LCO 3.9.1 and LCO 3.9.2)~~, the SDM ~~(LCO 3.1.1)~~, the intermediate range monitor neutron flux scram ~~(LCO 3.3.1.1)~~, and the control rod block instrumentation ~~(LCO 3.3.2.1)~~.

[2] , "Refueling Equipment Interlocks"
, "Refuel Position One-Rod-Out Interlock"
, "SHUTDOWN MARGIN (SDM)" [2]
, "Reactor Protection System (RPS) Instrumentation"
, "Control Rod Block Instrumentation"

[1] 1 S The safety analysis for the control rod removal ~~withdrawal~~ error during refueling (Ref. 2) ~~and the fuel assembly insertion error (Ref. 3)~~ evaluates the consequences of control rod withdrawal during refueling ~~and also fuel assembly insertion with a control rod withdrawn~~. A prompt reactivity excursion during refueling could potentially result in fuel failure with subsequent release of radioactive material to the environment. Control rod scram provides protection should a prompt reactivity excursion occur.

Control rod OPERABILITY during refueling satisfies Criterion 3 of ~~the NRC Policy Statement~~ 10 CFR 50.36(c)(2)(ii). [1]

(continued)

BASES (continued)

LCO

Each withdrawn control rod must be OPERABLE. The withdrawn control rod is considered OPERABLE if the scram accumulator pressure is ≥ [940] psig and the control rod is capable of being automatically inserted upon receipt of a scram signal 3
Inserted control rods have already completed their reactivity control function, and therefore are not required to be OPERABLE.

APPLICABILITY

During MODE 5, withdrawn control rods must be OPERABLE to ensure that in a scram the control rods will insert and provide the required negative reactivity to maintain the reactor subcritical.

2 when — occurs 2

For MODES 1 and 2, control rod requirements are found in LCO 3.1.2, "Reactivity Anomalies," LCO 3.1.3, "Control Rod OPERABILITY," LCO 3.1.4, "Control Rod Scram Times," and LCO 3.1.5, "Control Rod Scram Accumulators." During MODES 3 and 4, control rods are not able to be withdrawn since the reactor mode switch is in shutdown and a control rod block is applied. This provides adequate requirements for control rod OPERABILITY during these conditions.

ACTIONS

A.1

With one or more withdrawn control rods inoperable, action must be immediately initiated to fully insert the inoperable control rod(s). Inserting the control rod(s) ensures the shutdown and scram capabilities are not adversely affected. Actions must continue until the inoperable control rod(s) is fully inserted.

SURVEILLANCE REQUIREMENTS

SR 3.9.5.1 and SR 3.9.5.2

During MODE 5, the OPERABILITY of control rods is primarily required to ensure a withdrawn control rod will automatically insert if a signal requiring a reactor shutdown occurs. Because no explicit analysis exists for automatic shutdown during refueling, the shutdown function is satisfied if the withdrawn control rod is capable of

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.9.5.1 and SR 3.9.5.2 (continued)

automatic insertion and the associated CRD scram accumulator pressure is ≥ [940] psig. 3

The 7 day Frequency takes into consideration equipment reliability, procedural controls over the scram accumulators, and control room alarms and indicating lights that indicate low accumulator charge pressures.

SR 3.9.5.1 is modified by a Note that allows 7 days after withdrawal of the control rod to perform the Surveillance. This acknowledges that the control rod must first be withdrawn before performance of the Surveillance, and therefore avoids potential conflicts with SR 3.0.~~3 and SR 3.0.4~~. 1 2

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 26.~~ UFSAR, Section 3.1.2.3.7 1
2. U FSAR, Section ~~[15.1.13]~~. 15.4.1 3
~~3. FSAR, Section [15.1.14].~~ 1

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.9.5 - CONTROL ROD OPERABILITY — REFUELING

1. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

2. Editorial change made for enhanced clarity or to be consistent with the Writer's Guide or similar statements in other places in the Bases.

3. The brackets have been removed and the proper plant specific information/value has been provided.

B 3.9 REFUELING OPERATIONS

B 3.9.6 Reactor Pressure Vessel (RPV) Water Level—Irradiated Fuel

BASES

BACKGROUND

The movement of irradiated fuel assemblies ~~for handling of control rods~~ within the RPV requires a minimum water level of 23 ft above the top of the RPV flange. During refueling, this maintains a sufficient water level in the reactor vessel cavity and spent fuel pool. Sufficient water is necessary to retain iodine fission product activity in the water in the event of a fuel handling accident (Refs. 1 and 2). Sufficient iodine activity would be retained to limit offsite doses from the accident to ≤ 25% of 10 CFR 100 limits, as provided by the guidance of Reference 3.

APPLICABLE SAFETY ANALYSES

During movement of irradiated fuel assemblies ~~or handling of control rods~~, the water level in the RPV is an initial condition design parameter in the analysis of a fuel handling accident in containment postulated by Regulatory Guide 1.25 (Ref. 1). A minimum water level of 23 ft (Regulatory Position C.1.c of Ref. 1) allows a decontamination factor of 100 (Regulatory Position C.1.g of Ref. 1) to be used in the accident analysis for iodine. This relates to the assumption that 99% of the total iodine released from the pellet to cladding gap of all the dropped fuel assembly rods is retained by the water. The fuel pellet to cladding gap is assumed to contain 10% of the total fuel rod iodine inventory (Ref. 1).

Analysis of the fuel handling accident inside containment is described in Reference 2. With a minimum water level of 23 ft and a minimum decay time of 24 hours prior to fuel handling, the analysis and test programs demonstrate that the iodine release due to a postulated fuel handling accident is adequately captured by the water and that offsite doses are maintained within allowable limits (Ref. 4).

While the worst case assumptions include the dropping of the irradiated fuel assembly being handled onto the reactor core, the possibility exists of the dropped assembly striking the RPV flange and releasing fission products. Therefore, the minimum depth for water coverage to ensure

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

acceptable radiological consequences is specified from the RPV flange. Since the worst case event results in failed fuel assemblies seated in the core, as well as the dropped assembly, dropping an assembly on the RPV flange will result in reduced releases of fission gases. ~~[Based on this judgement, and the physical dimensions which preclude normal operation with water level 23 feet above the flange, a slight reduction in this water level is acceptable (Ref. 4).]~~ 2

RPV water level satisfies Criterion 2 of ~~the NRC Policy Statement~~ 10 CFR 50.36(c)(2)(ii). 3

1

LCO

A minimum water level of ~~[23]~~ ft above the top of the RPV flange is required to ensure that the radiological consequences of a postulated fuel handling accident are within acceptable limits, as provided by the guidance of Reference 3.

1

APPLICABILITY

LCO 3.9.6 is applicable when moving ~~[irradiated]~~ fuel assemblies ~~[or handling control rods (i.e., movement with other than the normal control rod drive)]~~ within the RPV. 2 The LCO minimizes the possibility of a fuel handling accident in containment that is beyond the assumptions of the safety analysis. [If irradiated fuel is not present within the RPV, there can be no significant radioactivity release as a result of a postulated fuel handling accident.] 1 Requirements for handling of new fuel assemblies or control rods (where water depth to the RPV flange is not of concern) are covered by LCO 3.9.7, "RPV Water Level - New Fuel or Control Rods." Requirements for fuel handling accidents in the spent fuel storage pool are covered by LCO 3.7.8, "Spent Fuel Storage Pool Water Level."

~~[Reviewer's Note: LCO 3.9.6 is written to cover new fuel and control rods as well as irradiated fuel. If a plant adopts LCO 3.9.7, however, the second bracketed portion of this Applicability is adopted in lieu of the first bracketed portion, and the LCO name and Required Action A.1 modified appropriately.]~~ 5

(continued)

BASES (continued)

ACTIONS

A.1

1 If the water level is < [23] ft above the top of the RPV flange, all operations involving movement of [irradiated] fuel assemblies [and handling of control rods] within the RPV shall be suspended immediately to ensure that a fuel handling accident cannot occur. The suspension of [irradiated] fuel movement [and control rod handling] shall not preclude completion of movement of a component to a safe position. 2

SURVEILLANCE REQUIREMENTS

SR 3.9.6.1

1 Verification of a minimum water level of [23] ft above the top of the RPV flange ensures that the design basis for the postulated fuel handling accident analysis during refueling operations is met. Water at the required level limits the consequences of damaged fuel rods, which are postulated to result from a fuel handling accident in containment (Ref. 2).

The Frequency of 24 hours is based on engineering judgment and is considered adequate in view of the large volume of water and the normal procedural controls on valve positions, which make significant unplanned level changes unlikely.

REFERENCES

1. Regulatory Guide 1.25, March 23, 1972.
3 2. U FSAR, Section [15.1.41]. 15.7.3 1
3. NUREG-0800, Section 15.7.4.
4. 10 CFR 100.11.

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.9.6 - RPV WATER LEVEL — IRRADIATED FUEL

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. The bracketed requirement has been deleted since it is not applicable to Dresden 2 and 3.

3. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

4. Editorial change made for enhanced clarity.

5. This Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed to what words are to be retained in the Bases. This is not meant to be retained in the final version of the plant specific submittal.

B 3.9 REFUELING OPERATIONS

B 3.9.7 Reactor Pressure Vessel (RPV) Water Level—New Fuel or Control Rods

BASES

BACKGROUND	The movement of new fuel assemblies or handling of control rods within the RPV when fuel assemblies seated within the reactor vessel are irradiated requires a minimum water level of [23] ft above the top of irradiated fuel assemblies seated within the RPV. During refueling, this maintains a sufficient water level above the irradiated fuel. Sufficient water is necessary to retain iodine fission product activity in the water in the event of a fuel handling accident (Refs. 1 and 2). Sufficient iodine activity would be retained to limit offsite doses from the accident to ≤ 25% of 10 CFR 100 limits, as provided by the guidance of Reference 3.
APPLICABLE SAFETY ANALYSES	During movement of new fuel assemblies or handling of control rods over irradiated fuel assemblies, the water level in the RPV is an initial condition design parameter in the analysis of a fuel handling accident in containment postulated by Regulatory Guide 1.25 (Ref. 1). A minimum water level of [23] ft (Regulatory Position C.1.c of Ref. 1) allows a decontamination factor of 100 (Regulatory Position C.1.g of Ref. 1) to be used in the accident analysis for iodine. This relates to the assumption that 99% of the total iodine released from the pellet to cladding gap of all the dropped fuel assembly rods is retained by the water. The fuel pellet to cladding gap is assumed to contain 10% of the total fuel rod iodine inventory (Ref. 1).
	Analysis of the fuel handling accident inside containment is described in Reference 2. With a minimum water level of [23] ft and a minimum decay time of 24 hours prior to fuel handling, the analysis and test programs demonstrate that the iodine release due to a postulated fuel handling accident is adequately captured by the water and that offsite doses are maintained within allowable limits (Ref. 4).
	The related assumptions include the worst case dropping of an irradiated fuel assembly onto the reactor core loaded with irradiated fuel assemblies. 3

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

RPV water level satisfies Criterion 2 of the NRC Policy Statement. 10 CFR 50.36(c)(

LCO

A minimum water level of [23] ft above the top of irradiated fuel assemblies seated within the RPV flange is required to ensure that the radiological consequences of a postulated fuel handling accident are within acceptable limits, as provided by the guidance of Reference 3.

APPLICABILITY

LCO 3.9.7 is applicable when moving new fuel assemblies or handling control rods (i.e., movement with other than the normal control rod drive) over irradiated fuel assemblies seated within the RPV. The LCO minimizes the possibility of a fuel handling accident in containment that is beyond the assumptions of the safety analysis. If irradiated fuel is not present within the RPV, there can be no significant radioactivity release as a result of a postulated fuel handling accident. Requirements for fuel handling accidents in the spent fuel storage pool are covered by LCO 3.7.8, "Spent Fuel Storage Pool Water Level." Requirements for handling irradiated fuel over the RPV are covered by LCO 3.9.6, "[Reactor Pressure Vessel (RPV)] Water Level [—Irradiated Fuel]." 4 1

ACTIONS

A.1

1 If the water level is < [23] ft above the top of irradiated fuel assemblies seated within the RPV, all operations involving movement of new fuel assemblies and handling of control rods within the RPV shall be suspended immediately to ensure that a fuel handling accident cannot occur. The suspension of fuel movement and control rod handling shall not preclude completion of movement of a component to a safe position.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.9.7.1

1

Verification of a minimum water level of [23] ft above the top of irradiated fuel assemblies seated within the RPV ensures that the design basis for the postulated fuel handling accident analysis during refueling operations is met. Water at the required level limits the consequences of damaged fuel rods, which are postulated to result from a fuel handling accident in containment (Ref. 2).

The Frequency of 24 hours is based on engineering judgment and is considered adequate in view of the large volume of water and the normal procedural controls on valve positions, which make significant unplanned level changes unlikely.

REFERENCES

1. Regulatory Guide 1.25, March 23, 1972.
2. U FSAR, Section ~~[15.1.41]~~ 15.7.3 — 2 — 1
3. NUREG-0800, Section 15.7.4.
4. 10 CFR 100.11.

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.9.7 - RPV WATER LEVEL — NEW FUEL OR CONTROL RODS

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

3. Editorial change made for enhanced clarity or to be consistent with the Writer's Guide or similar statements in other places in the Bases.

4. The words have been changed to be consistent with the LCO.

B 3.9 REFUELING OPERATIONS

B 3.9.8 ~~Residual Heat Removal (RHR)~~—High Water Level

1 Shutdown Cooling (SDC)

BASES

BACKGROUND

SDC 1 described

The purpose of the RHR System in MODE 5 is to remove decay heat and sensible heat from the reactor coolant, as ~~required~~ by ~~GDC 34~~. ~~Each~~ of the ~~two~~ shutdown cooling loops of the RHR System can provide the required decay heat removal. Each loop consists of ~~two~~ motor driven pump~~s~~, a heat exchanger, and associated piping and valves. ~~Both~~ loops ~~have a common~~ suction from ~~the same~~ recirculation loop. Each pump discharges the reactor coolant, after it has been cooled by circulation through the respective heat exchanger~~s~~, ~~to the reactor via the associated recirculation loop or~~ to the reactor via ~~the~~ low pressure coolant injection path. The RHR heat exchangers transfer heat to the RHR Service Water System. The ~~RHR shutdown cooling~~ mode is manually controlled.

1 UFSAR, Section 5.4.7 (Ref. 1)
three
SDC
Two
a
The
can take
either
1 either
SDC
and the associated recirculation loop
1 via the Reactor Building Closed Cooling Water (RBCCW) System
SDC 1

In addition to the RHR subsystems, the volume of water above the reactor pressure vessel (RPV) flange provides a heat sink for decay heat removal.

APPLICABLE SAFETY ANALYSES

SDC 1

With the unit in MODE 5, the RHR System is not required to mitigate any events or accidents evaluated in the safety analyses. The RHR System is required for removing decay heat to maintain the temperature of the reactor coolant.

SDC
satisfies 2
4

~~Although the~~ RHR System ~~does not meet a specific~~ criterion ~~of the NRC Policy Statement, it was identified in the NRC Policy Statement as an important contributor to risk reduction. Therefore, the RHR System is retained as a Specification~~.

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

LCO

1 SDC

Only one ~~RHR shutdown cooling~~ subsystem is required to be OPERABLE and in operation in MODE 5 with irradiated fuel in the RPV and the water level ≥ [23] ft above the RPV flange. Only one subsystem is required because the volume of water above the RPV flange provides backup decay heat removal capability. 3

to be OPERABLE 4

(continued)

BASES

LCO (continued)

1 SDC An OPERABLE ~~RHR shutdown cooling~~ subsystem consists of ~~an~~ ~~RHR~~ pump, a heat exchanger, valves, piping, instruments, and controls to ensure an OPERABLE flow path. ~~In MODE 5, the RHR cross tie valve is not required to be closed; thus, the valve may be opened to allow pumps in one loop to discharge through the opposite loop's heat exchanger to make a complete subsystem.~~ 1

In addition, the necessary portions of the RBCCW System must be capable of providing cooling water to the SDC heat exchanger and the SDC pump seal cooler.

SDC Additionally, each ~~RHR shutdown cooling~~ subsystem is considered OPERABLE if it can be manually aligned (remote or local) in the shutdown cooling mode for removal of decay heat. Operation (either continuous or intermittent) of one subsystem can maintain and reduce the reactor coolant temperature as required. However, to ensure adequate core flow to allow for accurate average reactor coolant temperature monitoring, nearly continuous operation is required. A Note is provided to allow a 2 hour exception ~~to~~ for TSTF-153 ~~shut down~~ the operating subsystem to not be in operation every 8 hours. Insert LCO 5

APPLICABILITY

1 SDC One ~~RHR shutdown cooling~~ subsystem must be OPERABLE and in operation in MODE 5, with irradiated fuel in the ~~reactor pressure vessel~~ RPV 5 and with the water level ≥ [23] feet above the top of the RPV flange, to provide decay heat removal. 3 1 SDC ~~RHR~~ System requirements in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System (RCS); ~~Section 3.5, Emergency Core Cooling Systems (ECCS) and Reactor Core Isolation Cooling (RCIC) System; and Section 3.6, Containment Systems~~. 6 5 sub ~~RHR Shutdown Cooling~~ SDC 1 sub System 5 requirements in MODE 5 with irradiated fuel in the ~~reactor pressure vessel~~ RPV and with the water level < [23] ft above the 3 the RPV flange are given in LCO 3.9.9, "Shutdown Cooling (SDC) - Low Water Level." 5 5

ACTIONS

A.1

1 SDC With no ~~RHR shutdown cooling~~ subsystem OPERABLE, an alternate method of decay heat removal must be ~~established~~ provided 5 within 1 hour. In this condition, the volume of water above the RPV flange provides adequate capability to remove decay heat from the reactor core. However, the overall reliability is reduced because loss of water level could

(continued)

$\boxed{5}$ INSERT LCO

This is permitted because the core heat generation can be low enough and the heatup rate slow enough to allow some changes to the SDC subsystem or other operations requiring SDC flow interruption.

BASES

ACTIONS

A.1 (continued)

5 The required cooling capacity of the alternate method should be ensured by verifying (by calculation or demonstration) its capability to maintain or reduce temperature.

result in reduced decay heat removal capability. The 1 hour Completion Time is based on decay heat removal function and the probability of a loss of the available decay heat removal capabilities. Furthermore, verification of the functional availability of these alternate method(s) must be reconfirmed every 24 hours thereafter. This will ensure continued heat removal capability. 4

Alternate decay heat removal methods are available to the operators for review and preplanning in the unit's Operating Procedures. For example, this may include the use of the Reactor Water Cleanup System, operating with the regenerative heat exchanger bypassed. The method used to remove the decay heat should be the most prudent choice based on unit conditions. 7 5 7

1 Fuel Pool Cooling or

or in combination with the Control Rod Drive System or Condensate/Feed System 1

B.1, B.2, B.3, and B.4

1 If no RHR shutdown cooling subsystem is OPERABLE and an alternate method of decay heat removal is not available in accordance with Required Action A.1, actions shall be taken immediately to suspend operations involving an increase in reactor decay heat load by suspending loading of irradiated fuel assemblies into the RPV.

Additional actions are required to minimize any potential fission product release to the environment. This includes ensuring secondary containment is OPERABLE; one standby gas treatment subsystem is OPERABLE; and secondary containment isolation capability (i.e., one secondary containment isolation valve and associated instrumentation are OPERABLE or other acceptable administrative controls to assure isolation capability) in each associated penetration not isolated that is assumed to be isolated to mitigate radioactive releases. This may be performed as an administrative check, by examining logs or other information to determine whether the components are out of service for maintenance or other reasons. It is not necessary to perform the Surveillances needed to demonstrate the OPERABILITY of the components. If, however, any required component is inoperable, then it must be restored to OPERABLE status. In this case, a surveillance may need to 7

5 is available

Insert ACTIONS B.1, B.2, B.3, and B.4

flow path 5

(continued)

$\boxed{5}$ INSERT ACTION B.1, B.2, B.3, AND B.4

. These administrative controls consist of stationing a dedicated operator, who is in continuous communication with the control room, at the controls of the isolation device. In this way, the penetration can be rapidly isolated when a need for secondary containment isolation is indicated

BASES

ACTIONS

B.1, B.2, B.3, and B.4 (continued)

be performed to restore the component to OPERABLE status. Actions must continue until all required components are OPERABLE.

C.1 and C.2

1 SDC sub 5

If no ~~RHR Shutdown Cooling System~~ is in operation, an alternate method of coolant circulation is required to be established within 1 hour. The Completion Time is modified such that the 1 hour is applicable separately for each occurrence involving a loss of coolant circulation.

1 SDC sub 5

During the period when the reactor coolant is being circulated by an alternate method (other than by the required ~~RHR Shutdown Cooling System~~), the reactor coolant temperature must be periodically monitored to ensure proper functioning of the alternate method. The once per hour Completion Time is deemed appropriate.

SURVEILLANCE REQUIREMENTS

SR 3.9.8.1

SDC 1 required 5

This Surveillance demonstrates that the RHR subsystem is in operation and circulating reactor coolant.

The required flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability. The Frequency of 12 hours is sufficient in view of other visual and audible indications available to the operator for monitoring the RHR subsystem in the control room.

SDC 1

REFERENCES

None. 1. UFSAR, Section 5.4.7

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.9.8 - SHUTDOWN COOLING (SDC) — HIGH WATER LEVEL

1. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

2. The proper 10 CFR 50.36(c)(2)(ii) criterion has been used. The current wording was developed prior to the issuance of the change to 10 CFR 50.36, which uses criterion 4 for the current words of the NUREG.

3. The brackets have been removed and the proper plant specific information/value has been provided.

4. Changes have been made to more closely match the LCO or Required Action requirements.

5. Editorial change made for enhanced clarity or to be consistent with the Writer's Guide or similar statements in other places in the Bases.

6. Shutdown Cooling subsystem requirements, which is what this LCO is governing, are not covered in other MODES in Sections 3.5 or 3.6. Therefore, this statement has been deleted.

7. Typographical/grammatical error corrected.

B 3.9 REFUELING OPERATIONS

B 3.9.9 ~~Residual Heat Removal (RHR)~~—Low Water Level

1 Shutdown Cooling (SDC)

BASES

BACKGROUND

UFSAR, Section 5.4.7 (Ref. 1) 1

The purpose of the RHR (SDC) System in MODE 5 is to remove decay heat and sensible heat from the reactor coolant, as ~~required~~ (described) by ~~GDC 34~~. ~~Each~~ (Two) of the ~~two~~ (three) shutdown cooling loops of the RHR (SDC) System can provide the required decay heat removal. Each loop consists of ~~two~~ (a) motor driven pump~~s~~, a heat exchanger, and associated piping and valves. ~~Both~~ (The) loops ~~have a common~~ (can take) suction from ~~the same~~ (either) recirculation loop. Each pump discharges the reactor coolant, after it has been cooled by circulation through the respective heat exchanger~~s~~, ~~to the reactor via the associated recirculation loop or~~ to the reactor via ~~the~~ (either) low pressure coolant injection path (and the associated recirculation loop). The RHR (SDC) heat exchangers transfer heat to the ~~RHR~~ Service Water System (via the Reactor Building Closed Cooling Water (RBCCW) System) 1. The ~~RHR~~ (SDC) shutdown ~~cooling~~ mode is manually controlled.

APPLICABLE SAFETY ANALYSES

With the unit in MODE 5, the RHR (SDC) System is not required to mitigate any events or accidents evaluated in the safety analyses. The RHR (SDC) System is required for removing decay heat to maintain the temperature of the reactor coolant. 1

2 ~~Although the RHR System does not meet a specific criterion of the NRC Policy Statement, it was identified in the NRC Policy Statement as an important contributor to risk reduction. Therefore, the RHR System is retained as a Specification.~~ (satisfies) (4) (10 CFR 50.36(c)(2)(ii))

LCO

In MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level < 23 ft above the reactor pressure vessel (RPV) flange ~~both RHR shutdown cooling~~ (two SDC) 1 subsystems must be OPERABLE (and one SDC subsystem must be in operation) 3.

1 (SDC)

An OPERABLE ~~RHR shutdown cooling~~ subsystem consists of a~~n~~ 1 ~~RHR~~ pump, a heat exchanger, valves, piping, instruments, and controls to ensure an OPERABLE flow path. To meet the LCO, ~~both pumps in one loop or~~ one pump in each of the two (required) 4 loops must be OPERABLE. ~~In MODE 5, the RHR cross tie valve is not required to be closed; thus, the valve may be opened to~~

(In addition, the necessary portions of the RBCCW System must be capable of providing cooling water to the SDC heat exchanger and the SDC pump seal cooler.)

(continued)

BASES

LCO (continued)

~~allow pumps in one loop to discharge through the opposite loop's heat exchanger to make a complete subsystem.~~ 1

Additionally, each ~~RHR shutdown cooling~~ SDC subsystem is considered OPERABLE if it can be manually aligned (remote or local) in the shutdown cooling mode for removal of decay heat. Operation (either continuous or intermittent) of one subsystem can maintain and reduce the reactor coolant temperature as required. However, to ensure adequate core flow to allow for accurate average reactor coolant temperature monitoring, nearly continuous operation is required. A Note is provided to allow a 2 hour exception ~~to~~ for ~~shut down~~ the operating subsystem to not be in operation every 8 hours. TSTF-153

Insert LCO 4

APPLICABILITY

1 SDC

Two ~~RHR shutdown cooling~~ subsystems are required to be OPERABLE, and one SDC subsystem 4 must be in operation in MODE 5, with irradiated fuel in the RPV and with the water level < [23] 5 ft above the top of the RPV flange, to provide decay heat removal. ~~RHR System requirements in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System (RCS); Section 3.5, Emergency Core Cooling Systems (ECCS) and Reactor Core Isolation Cooling (RCIC) System; and Section 3.6, Containment Systems.~~ Sub 4 SDC 1 6 ~~RHR Shutdown Cooling~~ SDC 1 Sub 4 ~~System~~ requirements in MODE 5 with irradiated fuel in the RPV and with the water level ≥ [23] 3 ft above the RPV flange are given in LCO 3.9.8, "~~Residual Heat Removal (RHR)~~ Shutdown Cooling (SDC) 7—High Water Level."

ACTIONS

A.1

SDC 1

With one of the two required ~~RHR shutdown cooling~~ subsystems inoperable, the remaining subsystem is capable of providing the required decay heat removal. However, the overall reliability is reduced. Therefore, an alternate method of decay heat removal must be provided. 8 With both required ~~RHR shutdown cooling~~ SDC 1 subsystems inoperable, an alternate method of decay heat removal must be provided in addition to that provided for the initial ~~RHR shutdown cooling~~ subsystem inoperability. This re-establishes backup decay heat removal capabilities, similar to the requirements of the LCO. The 1 hour Completion Time is based on the decay heat removal function and the probability of a loss of the

(continued)

$\boxed{4}$ INSERT LCO

This is permitted because the core heat generation can be low enough and the heatup rate slow enough to allow some changes to the SDC subsystem or other operations requiring SDC flow interruption.

BASES

ACTIONS

A.1 (continued)

available decay heat removal capabilities. Furthermore, verification of the functional availability of this alternate method(s) must be reconfirmed every 24 hours thereafter. This will ensure continued heat removal capability. 3

4 The required cooling capacity of the alternate method should be ensured by verifying (by calculation or demonstration) its capability to maintain or reduce temperature.

Alternate decay heat removal methods are available to the operators for review and preplanning in the unit's operating procedures. For example, this may include the use of the Reactor Water Cleanup System, operating with the regenerative heat exchanger bypassed. The method used to remove decay heat should be the most prudent choice based on unit conditions. 8 1 8

1 Fuel Pool Cooling or

or in combination with the Control Rod Drive System or Condensate / Feed System 1

7 Insert ACTION A.1

B.1, B.2, and B.3

With the required decay heat removal subsystem(s) inoperable and the required alternate method(s) of decay heat removal not available in accordance with Required Action A.1, additional actions are required to minimize any potential fission product release to the environment. This includes ensuring secondary containment is OPERABLE; one standby gas treatment subsystem is OPERABLE; and secondary containment isolation capability (i.e., one secondary containment isolation valve and associated instrumentation are OPERABLE or other acceptable administrative controls to assure isolation capability) in each associated penetration not isolated that is assumed to be isolated to mitigate radioactive releases. This may be performed as an administrative check, by examining logs or other information to determine whether the components are out of service for maintenance or other reasons. It is not necessary to perform the Surveillances needed to demonstrate the OPERABILITY of the components. If, however, any required component is inoperable, then it must be restored to OPERABLE status. In this case, the surveillance may need to be performed to restore the component to OPERABLE status. Actions must continue until all required components are OPERABLE. 8

4 is available

Insert ACTIONS B.1, B.2, and B.3

flowpath 4

(continued)

7 INSERT ACTION A.1

Condition A is modified by a Note allowing separate Condition entry for each inoperable SDC subsystem. This is acceptable since the Required Actions for this Condition provide appropriate compensatory actions for each inoperable SDC subsystem. Complying with the Required Actions allow for continued operation. A subsequent inoperable SDC subsystem is governed by subsequent entry into the Condition and application of the Required Actions.

4 INSERT ACTION B.1, B.2, AND B.3

. These administrative controls consist of stationing a dedicated operator, who is in continuous communication with the control room, at the controls of the isolation device. In this way, the penetration can be rapidly isolated when a need for secondary containment isolation is indicated

BASES

ACTION (continued)

C.1 and C.2

If no RHR subsystem is in operation, an alternate method of coolant circulation is required to be established within 1 hour. The Completion Time is modified such that the 1 hour is applicable separately for each occurrence involving a loss of coolant circulation.

During the period when the reactor coolant is being circulated by an alternate method (other than by the required ~~RHR Shutdown Cooling System~~), the reactor coolant temperature must be periodically monitored to ensure proper functioning of the alternate method. The once per hour Completion Time is deemed appropriate.

SURVEILLANCE REQUIREMENTS

SR 3.9.9.1

This Surveillance demonstrates that one ~~RHR shutdown cooling~~ subsystem is in operation and circulating reactor coolant. The required flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability.

The Frequency of 12 hours is sufficient in view of other visual and audible indications available to the operator for monitoring the RHR subsystems in the control room.

REFERENCES

~~None.~~ 1. UFSAR, Section 5.4.7

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.9.9 - SHUTDOWN COOLING (SDC) - LOW WATER LEVEL

1. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

2. The proper 10 CFR 50.36(c)(2)(ii) criterion has been used. The current wording was developed prior to the issuance of the change to 10 CFR 50.36, which uses criterion 4 for the current words of the NUREG.

3. Changes have been made to more closely match the LCO or Required Action requirements.

4. Editorial change made for enhanced clarity or to be consistent with the Writer's Guide or similar statements in other places in the Bases.

5. The brackets have been removed and the proper plant specific information/value has been provided.

6. Shutdown Cooling subsystem requirements, which is what this LCO is governing, are not covered in other MODES in Sections 3.5 or 3.6. Therefore, this statement has been deleted.

7. Changes have been made to reflect those changes made to the Specifications.

8. Typographical/grammatical error corrected.

GENERIC NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: SECTION 3.9 - REFUELING OPERATIONS

ADMINISTRATIVE CHANGES
("A.x" Labeled Comments/Discussions)

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change involves reformatting, renumbering, and rewording the existing Technical Specifications. The reformatting, renumbering, and rewording process involves no technical changes to the existing Technical Specifications. As such, this change is administrative in nature and does not impact initiators of analyzed events or assumed mitigation of accident or transient events. Therefore, this change does 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 does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change will not impose any new or eliminate any old requirements. Thus, this change 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?

   The proposed change will not reduce a margin of safety because it has no impact on any safety analyses assumptions. This change is administrative in nature. Therefore, the change does not involve a significant reduction in a margin of safety.

RELOCATED SPECIFICATIONS
("R.x" Labeled Comments/Discussions)

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relocates requirements and surveillances for structures, systems, components or variables that do not meet the criteria for inclusion in Technical Specifications as identified in the Application of Selection Criteria to the Dresden 2 and 3 Technical Specifications. The affected structures, systems, components or variables are not assumed to be initiators of analyzed events and are not assumed to mitigate accident or transient events. The requirements and surveillances for these affected structures, systems, components or variables will be relocated from the Technical Specifications to an appropriate administratively controlled document which will be maintained pursuant to 10 CFR 50.59. In addition, the affected structures, systems, components or variables are addressed in existing surveillance procedures which are also controlled by 10 CFR 50.59 and subject to the change control provisions imposed by plant administrative procedures, which endorse applicable regulations and standards. Therefore, this change does 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 does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The proposed change will not impose or eliminate any requirements and adequate control of existing requirements will be maintained. Thus, this change 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?

   The proposed change will not reduce a margin of safety because it has no impact on any safety analysis assumptions. In addition, the relocated requirements and surveillances for the affected structure, system, component or variable remain the same as the existing Technical Specifications. Since any future changes to these requirements or the surveillance procedures will be evaluated per the requirements of 10 CFR 50.59, no reduction in a margin of safety will be permitted.

RELOCATED SPECIFICATIONS
("R.x" Labeled Comments/Discussions

3. (continued)

The existing requirement for NRC review and approval of revisions, in accordance with 10 CFR 50.92, to these details proposed for relocation does not have a specific margin of safety upon which to evaluate. However, since the proposed change is consistent with the BWR ISTS, NUREG-1433, Rev. 1, approved by the NRC Staff, revising the Technical Specifications to reflect the approved level of detail ensures no significant reduction in the margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
("M.x" Labeled Comments/Discussions)

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change provides more stringent requirements for operation of the facility. These more stringent requirements do not result in operation that will increase the probability of initiating an analyzed event and do not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements continue to ensure process variables, structures, systems, and components are maintained consistent with the safety analyses and licensing basis. Therefore, this change does 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 does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in the methods governing normal plant operation. The proposed change does impose different requirements. However, these changes are consistent with the assumptions in the safety analyses and licensing basis. Thus, this change 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?

   The imposition of more restrictive requirements either has no impact on or increases the margin of plant safety. As provided in the discussion of the change, each change in this category is by definition, providing additional restrictions to enhance plant safety. The change maintains requirements within the safety analyses and licensing basis. Therefore, this change does not involve a significant reduction in a margin of safety.

"GENERIC" LESS RESTRICTIVE CHANGES:
RELOCATING DETAILS TO TECHNICAL SPECIFICATION BASES, UFSAR, TRM, OR OTHER PLANT CONTROLLED DOCUMENTS
("LA.x" Labeled Comments/Discussions)

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relocates certain details from the Technical Specifications to the Bases, UFSAR, TRM, or other plant controlled documents. The Bases, UFSAR, TRM, and other plant controlled documents containing the relocated information will be maintained in accordance with 10 CFR 50.59. In addition to 10 CFR 50.59 provisions, the Technical Specification Bases are subject to the change control provisions in the Administrative Controls Chapter of the ITS. The UFSAR is subject to the change control provisions of 10 CFR 50.71(e), and the plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which endorse applicable regulations and standards. Since any changes to the Bases, UFSAR, TRM, or other plant controlled documents will be evaluated per the requirements of the Bases Control Program in Chapter 5.0 of the ITS or 10 CFR 50.59, no increase (significant or insignificant) in the probability or consequences of an accident previously evaluated will be allowed. Therefore, this change does 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 does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The proposed change will not impose or eliminate any requirements, and adequate control of the information will be maintained. Thus, this change 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?

   The proposed change will not reduce a margin of safety because it has no impact on any safety analysis assumptions. In addition, the details to be transposed from the Technical Specifications to the Bases, UFSAR, TRM, or other plant controlled

"GENERIC" LESS RESTRICTIVE CHANGES:
RELOCATING DETAILS TO TECHNICAL SPECIFICATION BASES, UFSAR, TRM, OR OTHER PLANT CONTROLLED DOCUMENTS
("LA.x" Labeled Comments/Discussions)

3. (continued)

documents are the same as the existing Technical Specifications. Since any future changes to these details in the Bases, UFSAR, TRM, or other plant controlled documents will be evaluated per the requirements of 10 CFR 50.59, no reduction (significant or insignificant) in a margin of safety will be allowed. Based on 10 CFR 50.92, the existing requirement for NRC review and approval of revisions, to these details proposed for relocation, does not have a specific margin of safety upon which to evaluate. However, since the proposed change is consistent with the BWR ISTS, NUREG-1433, Rev. 1, approved by the NRC Staff, revising the Technical Specifications to reflect the approved level of detail ensures no significant reduction in the margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.9.1 - REFUELING EQUIPMENT INTERLOCKS

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change removes an unnecessary additional performance of a Surveillance which has been performed within its normally required Frequency. Not performing the Surveillance will not affect any equipment which is assumed as an initiator of any analyzed event. Furthermore, since the Surveillance continues to be performed on its normal Frequency, there is no impact on the capability of the system to perform its required safety function. Therefore, the proposed change does 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 does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce a new mode of plant operation and does not require physical modification to the plant.

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

   The normal Surveillance Frequency has been shown, based on operating experience, to be adequate for assuring the equipment is available and capable of performing its intended function. Additionally, the requirements of SR 3.0.1 (CTS 4.0.A and 4.0.C) provide assurance the equipment is OPERABLE prior to beginning the functions for which it is required. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

L.2 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The requirement to perform a CHANNEL FUNCTIONAL TEST to verify the restoration of refueling equipment interlocks is not assumed in the initiation of any analyzed event. This requirement was specified in the Technical Specifications to ensure the OPERABILITY of the refueling equipment interlocks was positively verified following repair, maintenance, or replacement. The proposed deletion of this explicit requirement is acceptable since SR 3.0.1 (CTS 4.0.A) requires the appropriate SRs to be performed to demonstrate OPERABILITY after restoration of a component that cause the SR to be failed. In this case, SR 3.0.1 (CTS 4.0.A) would require proposed SR 3.9.1.1 (CTS 4.10.A.2) to be performed, which requires a CHANNEL FUNCTIONAL TEST on the refueling equipment interlocks be performed. As a result, the accident consequences are unaffected by this change. Therefore, this change does 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 possibility of a new or different kind of accident from any accident previously evaluated is not created because the proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant.

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

   The proposed deletion of the explicit requirement to perform a CHANNEL FUNCTIONAL TEST on the refueling equipment interlocks following repair, maintenance, or replacement is acceptable since SR 3.0.1 (CTS 4.0.A) requires the appropriate SRs to be performed to demonstrate OPERABILITY after restoration of a component that cause the SR to be failed. In this case, SR 3.0.1 (CTS 4.0.A) would require proposed SR 3.9.1.1 (CTS 4.10.A.2) to be performed, which requires a CHANNEL FUNCTIONAL TEST of the refueling equipment interlocks be performed. As a result, the existing requirement to perform a CHANNEL FUNCTIONAL TEST on the refueling equipment interlocks following repair, maintenance, or replacement is maintained. Therefore, this change does not involve a significant reduction in a margin of safety.

L.3 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change provides alternative methods for ensuring operations are not performed with equipment that would potentially not be blocked from unacceptable operations (e.g., loading fuel into a cell with a control rod withdrawn or withdrawing a control rod while fuel is being moved in the reactor pressure vessel). The methods that the refueling interlocks use to prevent these occurrences are to block control rod withdrawal when fuel is being moved and to block movement of the refueling platform and hoist when a control rod is withdrawn. The proposed Required Actions will ensure both these occurrences are prevented. ITS 3.9.1 Required Action A.2.1 will ensure a control rod block is inserted. This will prevent a control rod from being withdrawn when fuel is being moved in the reactor pressure vessel. ITS 3.9.1 Required Action A.2.2 will ensure that all control rods in core cells containing one or more fuel assemblies are fully inserted. This will prevent loading fuel into a core cell with the control rod withdrawn. Thus, the proposed Required Actions provide equivalent methods for precluding the assumed occurrences. Therefore, the proposed change does 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 does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce a new mode of plant operation (since the new actions provide an equivalent level of protection) and does not require physical modification to the plant.

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

   The proposed change provides alternative methods for ensuring operations are not performed with equipment that would potentially not be blocked from unacceptable operations (e.g., loading fuel into a cell with a control rod withdrawn or withdrawing a control rod while fuel is being moved in the reactor pressure vessel). The proposed Required Actions will ensure both these occurrences are prevented. ITS 3.9.1 Required Action A.2.1 will ensure a control rod block is inserted. This will prevent a control rod from being withdrawn when fuel is being moved in the reactor pressure vessel. ITS 3.9.1 Required Action A.2.2 will ensure that all control rods in core

L.3 CHANGE

3. (continued)

cells containing one or more fuel assemblies are fully inserted. This will prevent loading fuel into a core cell with the control rod withdrawn. Thus, the proposed Required Actions provide equivalent methods for precluding the assumed occurrences. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.9.2 - REFUEL POSITION ONE-ROD-OUT INTERLOCK

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The requirement to "lock" the reactor mode switch in the Shutdown position is not assumed in the initiation of any analyzed event. This requirement was specified in the Technical Specifications to ensure that the reactor mode switch was not inadvertently moved from the Shutdown position resulting in an unauthorized MODE change. However, adequate administrative controls exist as a result of ITS Table 1.1-1, MODES, and the requirements of proposed LCO 3.0.1 to ensure the reactor mode switch is maintained in the Shutdown or Refuel position without the explicit requirement to "lock" the reactor mode switch in Shutdown. Reactor mode switch positions other than Refuel or Shutdown result in the unit entering some other MODE; with the associated Technical Specification compliance requirements of that MODE and of proposed LCO 3.0.1. The Shutdown position is not provided for in ITS 3.9.2 since a control rod cannot be withdrawn with the reactor mode switch in Shutdown. Therefore, proposed SR 3.9.2.1 requires the reactor mode switch to be locked in the Refuel position. With the reactor mode switch in Refuel, the associated refueling interlocks only allow one control rod to be withdrawn and the accident analysis demonstrates that the reactor will remain subcritical in this condition. As a result, the accident consequences are unaffected by this change. Therefore, this change does 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 possibility of a new or different kind of accident from any accident previously evaluated is not created because the proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant.

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

   The requirement to "lock" the reactor mode switch in the Shutdown position was specified in the Technical Specifications to ensure that the reactor mode switch was not inadvertently moved from the Shutdown position resulting in an unauthorized MODE change. However, adequate administrative controls exist as a result of ITS Table 1.1-1, MODES, and the requirements of proposed LCO 3.0.1 to ensure the reactor mode

L.1 CHANGE

3. (continued)

switch is maintained in the Shutdown or Refuel position without the explicit requirement to "lock" the reactor mode switch in Shutdown. Reactor mode switch positions other than Refuel or Shutdown result in the unit entering some other MODE; with the associated Technical Specification compliance requirements of that MODE and of proposed LCO 3.0.1. The Shutdown position is not provided for in ITS 3.9.2 since a control rod cannot be withdrawn with the reactor mode switch in Shutdown. Therefore, proposed SR 3.9.2.1 requires the reactor mode switch to be locked in the Refuel position. With the reactor mode switch in Refuel, the associated refueling interlocks only allow one control rod to be withdrawn and the accident analysis demonstrates that the reactor will remain subcritical in this condition. Therefore, this change does not involve a significant reduction in a margin of safety.

L.2 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The refuel position one-rod-out interlock is not assumed as an initiator of any analyzed event. The role of this interlock is to ensure no more than one control rod may be withdrawn to prevent criticality, thereby limiting consequences. The proposed change provides ACTIONS to ensure that compensatory measures are immediately taken to protect against inadvertent criticality. These compensatory measures ensure that core reactivity is not increased by continued control rod withdrawal and that immediate action is initiated to reinsert the withdrawn control rod. As such, inadvertent criticality will be prevented. Therefore, this proposed 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 does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce a new mode of plant operation and does not require physical modification to the plant.

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

   The proposed requirements provide adequate protection against inadvertent criticality considering the margin provided in the reactivity calculations. A minor reduction through removal of one administrative control is offset by immediately suspending action which might lead to inadvertent criticality. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

L.3 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change would remove an unnecessary additional performance of a Surveillance which has been performed within its normally required Frequency. Not performing the Surveillance would not affect any equipment which is assumed to be an initiator of any analyzed event. Further, since the Surveillance continues to be performed on its normal Frequency, there is no impact on the capability of the system to perform its required safety function. Therefore, the proposed change does 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 does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce a new mode of plant operation and does not require physical modification to the plant.

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

   The normal Surveillance Frequency has been shown, based on operating experience, to be adequate for assuring the equipment is available and capable of performing its intended function. Additionally, the requirements of SR 3.0.1 (CTS 4.0.A and 4.0.C) provide assurance the equipment is OPERABLE prior to beginning the functions for which it is required. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

L.4 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change would allow entry into and operation in the applicable operating conditions prior to completion of the required Surveillance. The refuel position one-rod-out interlock is not assumed to be an initiator of any analyzed event. The role of this interlock is to ensure that no more than one control rod be withdrawn, which prevents criticality, thereby limiting consequences. The change does not delete the Surveillance but postpones it until conditions necessary to perform the test (withdrawal of a control rod) are achieved. The time period is acceptably short taking into consideration the small probability of an event when the OPERABILITY of the interlock has not been demonstrated. It also acknowledges that the most probable result of the Surveillance performance is the verification of OPERABILITY. The consequences of any analyzed events are unaffected since the change does not alter any system or component design assumption or operation. Therefore, the proposed change does 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 does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce a new mode of plant operation and does not require physical modification to the plant.

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

   The proposed change allows sufficient time to achieve the condition necessary to perform the test (withdrawal of a control rod). Sufficient procedural controls are provided for control rod withdrawal to prevent inadvertent criticality. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

L.5 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The requirement to perform a CHANNEL FUNCTIONAL TEST to verify the restoration of refuel position one-rod-out interlock is not assumed in the initiation of any analyzed event. This requirement was specified in the Technical Specifications to ensure the OPERABILITY of the refuel position one-rod-out interlock was positively verified following repair, maintenance, or replacement. The proposed deletion of this explicit requirement is acceptable since proposed SR 3.0.1 (CTS 4.0.A) requires the appropriate SRs to be performed to demonstrate OPERABILITY after restoration of a component that caused the SR to be failed. In this case, proposed SR 3.0.1 (CTS 4.0.A) would require proposed SR 3.9.2.2 (CTS 4.10.A.2) to be performed, which requires a CHANNEL FUNCTIONAL TEST on the refuel position one-rod-out interlock be performed. As a result, the accident consequences are unaffected by this change. Therefore, this change does 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 possibility of a new or different kind of accident from any accident previously evaluated is not created because the proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant.

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

   The proposed deletion of the explicit requirement to perform a CHANNEL FUNCTIONAL TEST on the refuel position one-rod-out interlock following repair, maintenance, or replacement is acceptable since proposed SR 3.0.1 (CTS 4.0.A) requires the appropriate SRs to be performed to demonstrate OPERABILITY after restoration of a component that caused the SR to be failed. In this case, proposed SR 3.0.1 (CTS 4.0.A) would require proposed SR 3.9.2.2 (CTS 4.10.A.2) to be performed, which requires a CHANNEL FUNCTIONAL TEST of the refuel position one-rod-out interlock be performed. As a result, the existing requirement to perform a CHANNEL FUNCTIONAL TEST on the refuel position one-rod-out interlock following repair, maintenance, or replacement is maintained. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.9.3 - CONTROL ROD POSITION

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change eliminates the requirement to insert control rods already withdrawn prior to removing fuel from the reactor. The proposed change will allow removal of fuel assemblies, which could result in a fuel handling accident. However, the fuel handling accident assumes a fuel assembly is dropped, and this change does not increase the probability of a dropped fuel assembly. In addition, this change recognizes that removing fuel from the reactor vessel is a Core Alteration that cannot add positive reactivity or cause an inadvertent criticality. Therefore, the proposed change does 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 will not involve any physical changes to plant systems, structures, or components. The changes in normal plant operation are consistent with the current safety analysis assumptions. 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 proposed change does not involve a significant reduction in a margin of safety because ITS 3.9.3 still requires all rods to be inserted during those Core Alterations that could add positive reactivity to the core. In addition, the MODE 5 requirements of ITS 3.1.1, "SHUTDOWN MARGIN (SDM)," will still be required to be met. These SDM requirements are adequate to ensure an inadvertent criticality does not occur. This change also recognizes that removing fuel from the reactor pressure vessel is a Core Alteration that cannot add positive reactivity and does not warrant the restrictions imposed by the existing requirements.

L.2 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change would remove an unnecessary additional performance of a Surveillance that has been performed within its normally required Frequency. Not performing the Surveillance would not affect any equipment that is assumed to be an initiator of any analyzed event. Further, since the Surveillance continues to be performed on its normal Frequency, there is no impact on the capability of the control rods to perform their required safety function. Therefore, the proposed change does 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 does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce a new mode of plant operation and does not require physical modification to the plant.

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

   The proposed change does not involve a significant reduction in a margin of safety since the normal periodic Frequency is adequate for assuring the LCO requirements are maintained. Additionally, the ACTION requirement of proposed ITS 3.9.3, which requires immediate suspension of loading of fuel assemblies in the core, and the requirements of SR 3.0.1 effectively preclude the starting of loading of fuel assemblies in the core unless the LCO requirements are met (in this case, the Surveillance Requirements satisfied within the normal periodic Frequency prior to starting fuel assembly loading).

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.9.4 - CONTROL ROD POSITION INDICATION

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change deletes the general position indication requirement and replaces it with a specific requirement for the control rod full-in position indication in MODE 5. The general position indication is not assumed to be an initiator of any analyzed event. The role of position indication is as an input to the refueling interlocks which mitigates the fuel handling accident, thereby limiting consequences. Since only the full-in indication provides this input, the remaining position indication is superfluous. Therefore, the proposed change does 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 does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce a new mode of plant operation and does not require physical modification to the plant.

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

   The proposed change deletes a requirement for general position indication, which provides no input to equipment that is assumed in the safety analyses. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.9.5 - CONTROL ROD OPERABILITY — REFUELING

There were no plant specific less restrictive changes identified for this Specification.

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change will remove an unnecessary additional performance of a Surveillance which has been performed within its normally required Frequency. Not performing the Surveillance will not affect any equipment which is assumed to be an initiator of any analyzed event. Further, since the Surveillance continues to be performed on its normal Frequency, there is no impact on the capability of the water above the RPV flange to perform its required safety function. Therefore, the proposed change does 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 does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce a new mode of plant operation and does not require physical modification to the plant.

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

   The normal Surveillance Frequency has been shown, based on operating experience, to be adequate for assuring the proper RPV water level is available and capable of performing its intended function. Additionally, the requirements of SR 3.0.1 (CTS 4.0.A, 4.0.B, and 4.0.C) provide assurance the RPV water level is within limits prior to beginning the functions for which it is required. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.9.7 - RPV WATER LEVEL — NEW FUEL OR CONTROL RODS

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The water level of the reactor pressure vessel (RPV) is not assumed to be an initiator of any analyzed event. The role of the RPV water level is in the mitigation of a fuel handling accident, thereby limiting consequences. The proposed change still provides assurance that the RPV water level is maintained consistent with analysis assumptions. Therefore, the proposed change does 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 does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change introduces no new mode of plant operation nor does it require physical modification to the plant.

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

   The proposed change allows a lower water level during some operations but maintains the water level consistent with all the safety analysis assumptions for those operations. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

L.2 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change will remove an unnecessary additional performance of a Surveillance which has been performed within its normally required Frequency. Not performing the Surveillance will not affect any equipment which is assumed to be an initiator of any analyzed event. Further, since the Surveillance continues to be performed on its normal Frequency, there is no impact on the capability of the water in the RPV to perform its required safety function. Therefore, the proposed change does 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 does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce a new mode of plant operation and does not require physical modification to the plant.

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

   The normal Surveillance Frequency has been shown, based on operating experience, to be adequate for assuring the proper RPV water level is available and capable of performing its intended function. Additionally, the requirements of SR 3.0.1 (CTS 4.0.A, 4.0.B and 4.0.C) provide assurance the RPV water level is within limits prior to beginning the functions for which it is required. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.9.8 - SHUTDOWN COOLING (SDC) — HIGH WATER LEVEL

There were no plant specific less restrictive changes identified for this Specification.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.9.9 - SHUTDOWN COOLING (SDC) — LOW WATER LEVEL

There were no plant specific less restrictive changes identified for this Specification.

NO SIGNIFICANT HAZARDS CONSIDERATION
CTS: 3/4.10.E - COMMUNICATIONS

There were no plant specific less restrictive changes identified for this Specification.

ENVIRONMENTAL ASSESSMENT
ITS: SECTION 3.9 - REFUELING OPERATIONS

In accordance with the criteria set forth in 10 CFR 50.21, ComEd has evaluated this proposed Technical Specification change for identification of licensing and regulatory actions requiring environmental assessment, determined it meets the criteria for a categorical exclusion set forth in 10 CFR 51.22(c)(9) and as such, has determined that no irreversible consequences exist in accordance with 10 CFR 50.92(b). This determination is based on the fact that this change is being proposed as an amendment to a license issued pursuant to 10 CFR which changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or which changes an inspection or a surveillance requirement, and the amendment meets the following specific criteria:

1. The amendment involves no significant hazards consideration.

   As demonstrated in the No Significant Hazards Consideration, this proposed amendment does not involve any significant hazards consideration.

2. There is no significant change in the type or significant increase in the amounts of any effluents that may be released offsite.

   The proposed change will not result in changes in the operation or configuration of the facility. There will be no change in the level of controls or methodology used for processing of radioactive effluents or handling of solid radioactive waste, nor will the proposal result in any change in the normal radiation levels within the plant. Therefore, there will be no change in the types or significant increase in the amounts of any effluents released offsite resulting from this change.

3. There is no significant increase in individual or cumulative occupational radiation exposure.

   The proposed change will not result in changes in the operation or configuration of the facility which impact radiation exposure. There will be no change in the level of controls or methodology used for processing of radioactive effluents or handling of solid radioactive waste, nor will the proposal result in any change in the normal radiation levels within the plant. Therefore, there will be no increase in individual or cumulative occupational radiation exposure resulting from this change.

Therefore, based upon the above evaluation, ComEd has concluded that no irreversible consequences exist with the proposed change.

3.10 SPECIAL OPERATIONS

3.10.1 Reactor Mode Switch Interlock Testing

LCO 3.10.1 The reactor mode switch position specified in Table 1.1-1 for MODES 3, 4, and 5 may be changed to include the run, startup/hot standby, and refuel position, and operation considered not to be in MODE 1 or 2, to allow testing of instrumentation associated with the reactor mode switch interlock functions, provided:

a. All control rods remain fully inserted in core cells containing one or more fuel assemblies; and

b. No CORE ALTERATIONS are in progress.

APPLICABILITY: MODES 3 and 4 with the reactor mode switch in the run, startup/hot standby, or refuel position,
MODE 5 with the reactor mode switch in the run or startup/hot standby position.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	A.1 Suspend CORE ALTERATIONS except for control rod insertion. AND	Immediately
	A.2 Fully insert all insertable control rods in core cells containing one or more fuel assemblies. AND	1 hour
		(continued)

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.1.1	Verify all control rods are fully inserted in core cells containing one or more fuel assemblies.	12 hours
SR 3.10.1.2	Verify no CORE ALTERATIONS are in progress.	24 hours

3.10 SPECIAL OPERATIONS

3.10.2 Single Control Rod Withdrawal — Hot Shutdown

LCO 3.10.2 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, 11, and 12 of Table 3.3.1.1-1,

LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," MODE 5 requirements, and

LCO 3.9.5, "Control Rod OPERABILITY — Refueling,"

<u>OR</u>

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

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

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more of the above requirements not met.	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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.2.1	Perform the applicable SRs for the required LCOs.	According to the applicable SRs
SR 3.10.2.2	-------------------NOTE------------------- Not required to be met if SR 3.10.2.1 is satisfied for LCO 3.10.2.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 3.10.2.3	Verify all control rods, other than the control rod being withdrawn, are fully inserted.	24 hours

3.10 SPECIAL OPERATIONS

3.10.3 Single Control Rod Withdrawal – Cold Shutdown

LCO 3.10.3 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, 11, and 12 of Table 3.3.1.1-1,

   LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," MODE 5 requirements, and

   LCO 3.9.5, "Control Rod OPERABILITY – Refueling,"

   OR

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

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

ACTIONS

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

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

(continued)

ACTIONS

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. AND B.2.1 Initiate action to fully insert all control rods. OR B.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.3.1	Perform the applicable SRs for the required LCOs.	According to 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.c.1 requirements. -- Verify all control rods, other than the control rod being withdrawn, in a five by five array centered on the control rod being withdrawn, are disarmed.	24 hours

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.3.3	Verify all control rods, other than the control rod being withdrawn, are fully inserted.	24 hours
SR 3.10.3.4	------------------NOTE------------------ Not required to be met if SR 3.10.3.1 is satisfied for LCO 3.10.3.b.1 requirements. -- Verify a control rod withdrawal block is inserted.	24 hours

3.10 SPECIAL OPERATIONS

3.10.4 Single Control Rod Drive (CRD) Removal — Refueling

LCO 3.10.4 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:

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)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u>	
	A.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.4.1	Verify all control rods, other than the control rod withdrawn for the removal of the associated CRD, are fully inserted.	24 hours
SR 3.10.4.2	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 3.10.4.3	Verify a control rod withdrawal block is inserted.	24 hours

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.4.4	Perform SR 3.1.1.1.	According to SR 3.1.1.1
SR 3.10.4.5	Verify no other CORE ALTERATIONS are in progress.	24 hours

3.10 SPECIAL OPERATIONS

3.10.5 Multiple Control Rod Withdrawal — Refueling

LCO 3.10.5 The requirements of LCO 3.9.3, "Control Rod Position"; LCO 3.9.4, "Control Rod Position Indication"; and LCO 3.9.5, "Control Rod OPERABILITY — Refueling," may be suspended, and the "full-in" position indicators may be bypassed for any number of control rods in MODE 5, to allow withdrawal of these control rods, removal of associated control rod drives (CRDs), or both, provided the following requirements are met:

a. The four fuel assemblies are removed from the core cells associated with each control rod or CRD to be removed;

b. All other control rods in core cells containing one or more fuel assemblies are fully inserted; and

c. Fuel assemblies shall only be loaded in compliance with an approved spiral reload sequence.

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

ACTIONS

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.5.1	Verify the four fuel assemblies are removed from core cells associated with each control rod or CRD removed.	24 hours
SR 3.10.5.2	Verify all other control rods in core cells containing one or more fuel assemblies are fully inserted.	24 hours
SR 3.10.5.3	-------------------NOTE------------------- Only required to be met during fuel loading. -- Verify fuel assemblies being loaded are in compliance with an approved spiral reload sequence.	24 hours

3.10 SPECIAL OPERATIONS

3.10.6 Control Rod Testing - Operating

LCO 3.10.6 The requirements of LCO 3.1.6, "Rod Pattern Control," may be suspended to allow performance of SDM demonstrations, control rod scram time testing, and control rod friction testing, provided:

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

OR

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

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.6.1	------------------NOTE------------------ Not required to be met if SR 3.10.6.2 satisfied. -- Verify movement of control rods is in compliance with the approved control rod sequence for the specified test by a second licensed operator or other qualified member of the technical staff.	During control rod movement
SR 3.10.6.2	------------------NOTE------------------ Not required to be met if SR 3.10.6.1 satisfied. -- Verify control rod sequence input to the RWM is in conformance with the approved control rod sequence for the specified test.	Prior to control rod movement

3.10 SPECIAL OPERATIONS

3.10.7 SHUTDOWN MARGIN (SDM) Test – Refueling

LCO 3.10.7 The reactor mode switch position specified in Table 1.1-1 for MODE 5 may be changed to include the startup/hot standby position, and operation considered not to be in MODE 2, to allow SDM testing, provided the following requirements are met:

a. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," MODE 2 requirements for Functions 2.a and 2.d of Table 3.3.1.1-1;

b. 1. LCO 3.3.2.1, "Control Rod Block Instrumentation," MODE 2 requirements for Function 2 of Table 3.3.2.1-1, with the analyzed rod position sequence requirements of SR 3.3.2.1.8 changed to require the control rod sequence to conform to the SDM test sequence,

<u>OR</u>

2. Conformance to the approved control rod sequence for the SDM test is verified by a second licensed operator or other qualified member of the technical staff;

c. Each withdrawn control rod shall be coupled to the associated CRD;

d. All control rod withdrawals during out of sequence control rod moves shall be made in the single notch withdrawal mode;

e. No other CORE ALTERATIONS are in progress; and

f. CRD charging water header pressure $\geq$ 940 psig.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE-------- Separate Condition entry is allowed for each control rod. --------------------- One or more control rods not coupled to its associated CRD.	-------------NOTE------------ Rod worth minimizer may be bypassed as allowed by LCO 3.3.2.1, "Control Rod Block Instrumentation," if required, to allow insertion of inoperable control rod and continued operation. -----------------------------	
	A.1 Fully insert inoperable control rod.	3 hours
	AND	
	A.2 Disarm the associated CRD.	4 hours
B. One or more of the above requirements not met for reasons other than Condition A.	B.1 Place the reactor mode switch in the shutdown or refuel position.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.7.1 Perform the MODE 2 applicable SRs for LCO 3.3.1.1, Functions 2.a and 2.d of Table 3.3.1.1-1.	According to the applicable SRs

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.7.2	-------------------NOTE------------------- Not required to be met if SR 3.10.7.3 satisfied. -- Perform the MODE 2 applicable SRs for LCO 3.3.2.1, Function 2 of Table 3.3.2.1-1.	According to the applicable SRs
SR 3.10.7.3	-------------------NOTE------------------- Not required to be met if SR 3.10.7.2 satisfied. -- Verify movement of control rods is in compliance with the approved control rod sequence for the SDM test by a second licensed operator or other qualified member of the technical staff.	During control rod movement
SR 3.10.7.4	Verify no other CORE ALTERATIONS are in progress.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.7.5	Verify each withdrawn control rod does not go to the withdrawn overtravel position.	Each time the control rod is withdrawn to "full out" position AND Prior to satisfying LCO 3.10.7.c requirement after work on control rod or CRD System that could affect coupling
SR 3.10.7.6	Verify CRD charging water header pressure $\geq$ 940 psig.	7 days

B 3.10 SPECIAL OPERATIONS

B 3.10.1 Reactor Mode Switch Interlock Testing

BASES

BACKGROUND

The purpose of this Special Operations LCO is to permit operation of the reactor mode switch from one position to another to confirm certain aspects of associated interlocks during periodic tests and calibrations in MODES 3, 4, and 5.

The reactor mode switch is a conveniently located, multiposition, keylock switch provided to select the necessary scram functions for various plant conditions (Ref. 1). The reactor mode switch selects the appropriate trip relays for scram functions and provides appropriate bypasses. The mode switch positions and related scram interlock functions are summarized as follows:

a. Shutdown — Initiates a reactor scram; bypasses main steam line isolation and low turbine condenser vacuum scram;

b. Refuel — Selects Neutron Monitoring System (NMS) scram function for low neutron flux level operation (but does not disable the average power range monitor scram); bypasses main steam line isolation and low turbine condenser vacuum scram;

c. Startup/Hot Standby — Selects NMS scram function for low neutron flux level operation (intermediate range monitors and average power range monitors); bypasses main steam line isolation and low turbine condenser vacuum scram; and

d. Run — Selects NMS scram function for power range operation.

The reactor mode switch also provides interlocks for such functions as control rod blocks, scram discharge volume trip bypass, refueling interlocks, and main steam isolation valve isolations.

APPLICABLE SAFETY ANALYSES

The purpose for reactor mode switch interlock testing is to prevent fuel failure by precluding reactivity excursions or core criticality. The interlock functions of the shutdown

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

and refuel positions normally maintained for the reactor mode switch in MODES 3, 4, and 5 are provided to preclude reactivity excursions that could potentially result in fuel failure. Interlock testing that requires moving the reactor mode switch to other positions (run, startup/hot standby, or refuel) while in MODE 3, 4, or 5, requires administratively maintaining all control rods inserted and no CORE ALTERATIONS in progress. With all control rods inserted in core cells containing one or more fuel assemblies, and no CORE ALTERATIONS in progress, there are no credible mechanisms for unacceptable reactivity excursions during the planned interlock testing.

For postulated accidents, such as control rod removal error during refueling, the accident analysis demonstrates that fuel failure will not occur (Ref. 2). The withdrawal of a single control rod will not result in criticality when adequate SDM is maintained. Also, loading fuel assemblies into the core with a single control rod withdrawn will not result in criticality, thereby preventing fuel failure.

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) 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. MODES 3, 4, and 5 operations not specified in Table 1.1-1 can be performed in accordance with other Special Operations LCOs (i.e., LCO 3.10.2, "Single Control Rod Withdrawal — Hot Shutdown," LCO 3.10.3, "Single Control Rod Withdrawal — Cold Shutdown," and LCO 3.10.7, "SDM Test — Refueling") without meeting this LCO or its ACTIONS. If any testing is performed that involves the reactor mode switch interlocks and requires repositioning beyond that specified in Table 1.1-1 for the current MODE of operation, the testing can be performed, provided all interlock functions potentially defeated are administratively controlled. In MODES 3, 4, and 5 with the reactor mode switch in shutdown as specified in Table 1.1-1,

(continued)

BASES

LCO (continued)	all control rods are fully inserted and a control rod block is initiated. Therefore, all control rods in core cells that contain one or more fuel assemblies must be verified fully inserted while in MODES 3, 4, and 5, with the reactor mode switch in other than the shutdown position. The additional LCO requirement to preclude CORE ALTERATIONS is appropriate for MODE 5 operations, as discussed below, and is inherently met in MODES 3 and 4 by the definition of CORE ALTERATIONS, which cannot be performed with the vessel head in place. In MODE 5, with the reactor mode switch in the refuel position, only one control rod can be withdrawn under the refuel position one-rod-out interlock (LCO 3.9.2, "Refuel Position One-Rod-Out Interlock"). The refueling equipment interlocks (LCO 3.9.1, "Refueling Equipment Interlocks") appropriately control other CORE ALTERATIONS. Due to the increased potential for error in controlling these multiple interlocks, and the limited duration of tests involving the reactor mode switch position, conservative controls are required, consistent with MODES 3 and 4. The additional controls of administratively not permitting other CORE ALTERATIONS will adequately ensure that the reactor does not become critical during these tests.
APPLICABILITY	Any required periodic interlock testing involving the reactor mode switch, while in MODES 1 and 2, can be performed without the need for Special Operations exceptions. Mode switch manipulations in these MODES would likely result in unit trips. In MODES 3, 4, and 5, this Special Operations LCO is only permitted to be used to allow reactor mode switch interlock testing that cannot conveniently be performed without this allowance or testing that must be performed prior to entering another MODE. Such interlock testing may consist of required Surveillances, or may be the result of maintenance, repair, or troubleshooting activities. In MODES 3, 4, and 5, the interlock functions provided by the reactor mode switch in shutdown (i.e., all control rods inserted and incapable of withdrawal) and refueling (i.e., refueling interlocks to prevent inadvertent criticality during CORE ALTERATIONS) positions can be administratively controlled adequately during the performance of certain tests.

(continued)

BASES (continued)

ACTIONS

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

These Required Actions are provided to restore compliance with the Technical Specifications overridden by this Special Operations LCO. Restoring compliance will also result in exiting the Applicability of this Special Operations LCO.

All CORE ALTERATIONS, except control rod insertion, if in progress, are immediately suspended in accordance with Required Action A.1, and all insertable control rods in core cells that contain one or more fuel assemblies are fully inserted within 1 hour, in accordance with Required Action A.2. This will preclude potential mechanisms that could lead to criticality. Control rods in core cells containing no fuel assemblies do not affect the reactivity of the core and, therefore, do not have to be inserted. Suspension of CORE ALTERATIONS shall not preclude the completion of movement of a component to a safe condition. Placing the reactor mode switch in the shutdown position will ensure that all inserted control rods remain inserted and result in operating in accordance with Table 1.1-1. Alternatively, if in MODE 5, the reactor mode switch may be placed in the refuel position, which will also result in operating in accordance with Table 1.1-1. A Note is added to Required Action A.3.2 to indicate that this Required Action is not applicable in MODES 3 and 4, since only the shutdown position is allowed in these MODES. The allowed Completion Time of 1 hour for Required Action A.2, Required Action A.3.1, and Required Action A.3.2 provides sufficient time to normally insert the control rods and place the reactor mode switch in the required position, based on operating experience, and is acceptable given that all operations that could increase core reactivity have been suspended.

SURVEILLANCE REQUIREMENTS

SR 3.10.1.1 and SR 3.10.1.2

Meeting the requirements of this Special Operations LCO maintains operation consistent with or conservative to operating with the reactor mode switch in the shutdown position (or the refuel position for MODE 5). The functions of the reactor mode switch interlocks that are not in effect, due to the testing in progress, are adequately compensated for by the Special Operations LCO requirements.

(continued)

BASES

SURVEILLANCE REQUIREMENTS	<u>SR 3.10.1.1 and SR 3.10.1.2</u> (continued) The administrative controls are to be periodically verified to ensure that the operational requirements continue to be met. In addition, the all rods fully inserted Surveillance (SR 3.10.1.1) must be verified by a second licensed operator (Reactor Operator or Senior Reactor Operator) or other task qualified member of the technical staff (e.g., a shift technical advisor or reactor engineer). The Surveillances performed at the 12 hour and 24 hour Frequencies are intended to provide appropriate assurance that each operating shift is aware of and verifies compliance with these Special Operations LCO requirements.
REFERENCES	1. UFSAR, Chapter 7.2.2. 2. UFSAR, Section 15.4.1.

B 3.10 SPECIAL OPERATIONS

B 3.10.2 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., rod exercising, 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 removal error 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 UFSAR (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)

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) 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 3.10.1, "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 withdrawn-untrippable control rod to be the single highest worth control rod.

(continued)

BASES (continued)

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 3.10.3, 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," LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," 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.

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 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

(continued)

BASES

ACTIONS

A.1 (continued)

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 3.10.2.1, SR 3.10.2.2, and SR 3.10.2.3

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 3.10.2.2 is required to preclude the possibility of criticality. The control rods can be hydraulically disarmed by closing the drive water and exhaust water isolation valves. Electrically, the control rods can be disarmed by disconnecting power from all four directional control valve solenoids. SR 3.10.2.2 has been modified by a Note, which clarifies that this SR is not required to be met if SR 3.10.2.1 is satisfied for LCO 3.10.2.d.1 requirements, since SR 3.10.2.2 demonstrates that the alternative LCO 3.10.2.d.2 requirements are satisfied. Also, SR 3.10.2.3 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)

BASES

SURVEILLANCE REQUIREMENTS	SR 3.10.2.1, SR 3.10.2.2, and SR 3.10.2.3 (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 15.4.1.

B 3.10 SPECIAL OPERATIONS

B 3.10.3 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., rod exercising, 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 removal error 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 UFSAR (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)

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 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) 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 3.10.1, "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. 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.

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)

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 by electrically or hydraulically disarming the CRD (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.
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 3.10.2, 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," LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," 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.
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 each requirement of the LCO not met provide appropriate

(continued)

BASES

ACTIONS (continued)

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 LCO 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 3.10.3.1, SR 3.10.3.2, SR 3.10.3.3, and SR 3.10.3.4

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. Electrically, the control rods can be 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 3.10.3.2 and SR 3.10.3.4 have been modified by Notes, which clarify that these SRs are not required to be met if the alternative requirements demonstrated by SR 3.10.3.1 are satisfied.

REFERENCES

1. UFSAR, Section 15.4.1.

B 3.10 SPECIAL OPERATIONS

B 3.10.4 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, in a core cell containing one or more fuel assemblies is permitted to be withdrawn. 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 the refueling interlocks 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").

(continued)

BASES (continued)

APPLICABLE SAFETY ANALYSES

With the reactor mode switch in the refuel position, the analyses for control rod removal error 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 (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 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).

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, and all other control rods are inserted and incapable of being withdrawn by insertion of a control rod block.

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) 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.

(continued)

BASES (continued)

LCO

As described in LCO 3.0.7, compliance with this Special 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, 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.

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 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). Ensuring that the five by five array of control rods, centered on the withdrawn control rod, are inserted and incapable of withdrawal (by electrically or hydraulically disarming the CRD) adequately satisfies the backup protection that LCO 3.3.1.1 and LCO 3.9.2 would have otherwise provided. Also, once 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.

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)

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 3.10.4.1, SR 3.10.4.2, SR 3.10.4.3, SR 3.10.4.4, and SR 3.10.4.5

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. Electrically, the control rods can be disarmed by disconnecting power from all four directional control valve solenoids. 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.

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BASES

SURVEILLANCE REQUIREMENTS	SR 3.10.4.1, SR 3.10.4.2, SR 3.10.4.3, SR 3.10.4.4, and SR 3.10.4.5 (continued) 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 15.4.1.

B 3.10 SPECIAL OPERATIONS

B 3.10.5 Multiple Control Rod Withdrawal — Refueling

BASES

BACKGROUND

The purpose of this MODE 5 Special Operations LCO is to permit multiple control rod withdrawal during refueling 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, in a core cell containing one or more fuel assemblies is permitted to be withdrawn. When all four fuel assemblies are removed from a cell, the control rod may be withdrawn with no restrictions. Any number of control rods may be withdrawn and removed from the reactor vessel if their cells contain no fuel.

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.

To allow more than one control rod to be withdrawn during refueling, these interlocks must be defeated. This Special Operations LCO establishes the necessary administrative controls to allow bypassing the "full-in" position indicators.

APPLICABLE SAFETY ANALYSES

Explicit safety analyses in the UFSAR (Ref. 1) demonstrate that the functioning of the refueling interlocks and adequate SDM will prevent unacceptable reactivity excursions during refueling. To allow multiple control rod withdrawals, control rod removals, associated control rod drive (CRD) removal, or any combination of these, the "full-in" position indication is allowed to be bypassed for each withdrawn control rod if all fuel has been removed from

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BASES

APPLICABLE SAFETY ANALYSES (continued)	the cell. With no fuel assemblies in the core cell, the associated control rod has no reactivity control function and is not required to remain inserted. Prior to reloading fuel into the cell, however, the associated control rod must be inserted to ensure that an inadvertent criticality does not occur, as evaluated in the Reference 1 analysis. As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of 10 CFR 50.36(c)(2)(ii) 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 LCO 3.9.3, "Control Rod Position," LCO 3.9.4, "Control Rod Position Indication," or LCO 3.9.5, "Control Rod OPERABILITY - Refueling," not met, can be performed in accordance with the Required Actions of these LCOs without meeting this Special Operations LCO or its ACTIONS. If multiple control rod withdrawal or removal, or CRD removal is desired, all four fuel assemblies are required to be removed from the associated cells. Prior to entering this LCO, any fuel remaining in a cell whose CRD was previously removed under the provisions of another LCO must be removed. "Withdrawal" in this application includes the actual withdrawal of the control rod as well as maintaining the control rod in a position other than the full-in position, and reinserting the control rod. When fuel is loaded into the core with multiple control rods withdrawn, special spiral reload sequences are used to ensure that reactivity additions are minimized. Spiral reloading encompasses reloading a cell (four fuel locations immediately adjacent to a control rod) on the edge of a continuous fueled region (the cell can be loaded in any sequence). Otherwise, all control rods must be fully inserted before loading fuel.

(continued)

BASES (continued)

APPLICABILITY	Operation in MODE 5 is controlled by existing LCOs. The exceptions from other LCO requirements (e.g., the ACTIONS of LCO 3.9.3, LCO 3.9.4, or LCO 3.9.5) allowed by this Special Operations LCO are appropriately controlled by requiring all fuel to be removed from cells whose "full-in" indicators are allowed to be bypassed.
ACTIONS	A.1, A.2, A.3.1, and A.3.2 If one or more of the requirements of this Special Operations LCO are not met, the immediate implementation of these Required Actions restores operation consistent with the normal requirements for refueling (i.e., all control rods inserted in core cells containing one or more fuel assemblies) or with the exceptions granted by this Special Operations LCO. The Completion Times for Required Action A.1, Required Action A.2, Required Action A.3.1, and Required Action A.3.2 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 affected CRDs and insert their control rods, or initiate action to restore compliance with this Special Operations LCO.
SURVEILLANCE REQUIREMENTS	SR 3.10.5.1, SR 3.10.5.2, and SR 3.10.5.3 Periodic verification of the administrative controls established by this Special Operations LCO is prudent to preclude the possibility of an inadvertent criticality. The 24 hour Frequency is acceptable, given the administrative controls on fuel assembly and control rod removal, and takes into account other indications of control rod status available in the control room.
REFERENCES	1. UFSAR, Section 15.4.1.

B 3.10 SPECIAL OPERATIONS

B 3.10.6 Control Rod Testing - Operating

BASES

BACKGROUND

The purpose of this Special Operations LCO is to permit control rod testing, while in MODES 1 and 2, by imposing certain administrative controls. Control rod patterns during startup conditions are controlled by the operator and the rod worth minimizer (RWM) (LCO 3.3.2.1, "Control Rod Block Instrumentation"), such that only the specified control rod sequences and relative positions required by LCO 3.1.6, "Rod Pattern Control," are allowed over the operating range from all control rods inserted to the low power setpoint (LPSP) of the RWM. The sequences effectively limit the potential amount and rate of reactivity increase that could occur during a control rod drop accident (CRDA). During these conditions, control rod testing is sometimes required that may result in control rod patterns not in compliance with the prescribed sequences of LCO 3.1.6. These tests include SDM demonstrations, control rod scram time testing, and control rod friction testing. This Special Operations LCO provides the necessary exemption to the requirements of LCO 3.1.6 and provides additional administrative controls to allow the deviations in such tests from the prescribed sequences in LCO 3.1.6.

APPLICABLE SAFETY ANALYSES

The analytical methods and assumptions used in evaluating the CRDA are summarized in References 1, 2, 3, 4, and 5. CRDA analyses assume the reactor operator follows prescribed withdrawal sequences. These sequences define the potential initial conditions for the CRDA analyses. The RWM provides backup to operator control of the withdrawal sequences to ensure the initial conditions of the CRDA analyses are not violated. For special sequences developed for control rod testing, the initial control rod patterns assumed in the safety analysis of References 1, 2, 3, 4, and 5 may not be preserved. Therefore special CRDA analyses are required to demonstrate that these special sequences will not result in unacceptable consequences, should a CRDA occur during the testing. These analyses, performed in accordance with an NRC approved methodology, are dependent on the specific test being performed.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)	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) 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. Control rod testing may be performed in compliance with the prescribed sequences of LCO 3.1.6, and during these tests, no exceptions to the requirements of LCO 3.1.6 are necessary. For testing performed with a sequence not in compliance with LCO 3.1.6, the requirements of LCO 3.1.6 may be suspended, provided additional administrative controls are placed on the test to ensure that the assumptions of the special safety analysis for the test sequence are satisfied. Assurances that the test sequence is followed can be provided by either programming the test sequence into the RWM, with conformance verified as specified in SR 3.3.2.1.8 and allowing the RWM to monitor control rod withdrawal and provide appropriate control rod blocks if necessary, or by verifying conformance to the approved test sequence by a second licensed operator (Reactor Operator or Senior Reactor Operator) or other task qualified member of the technical staff (e.g., shift technical advisor or reactor engineer). These controls are consistent with those normally applied to operation in the startup range as defined in the SRs and ACTIONS of LCO 3.3.2.1, "Control Rod Block Instrumentation."
APPLICABILITY	Control rod testing, while in MODES 1 and 2, with THERMAL POWER greater than 10% RTP is adequately controlled by the existing LCOs on power distribution limits and control rod block instrumentation. Control rod movement during these conditions is not restricted to prescribed sequences and can be performed within the constraints of LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," and LCO 3.3.2.1. With THERMAL

(continued)

BASES

APPLICABILITY (continued)

POWER less than or equal to 10% RTP, the provisions of this Special Operations LCO are necessary to perform special tests that are not in conformance with the prescribed sequences of LCO 3.1.6.

While in MODES 3 and 4, control rod withdrawal is only allowed if performed in accordance with Special Operations LCO 3.10.2, "Single Control Rod Withdrawal - Hot Shutdown," or Special Operations LCO 3.10.3, "Single Control Rod Withdrawal - Cold Shutdown," which provide adequate controls to ensure that the assumptions of the safety analysis of Reference 1 is satisfied. During these Special Operations and while in MODE 5, the one-rod-out interlock (LCO 3.9.2, "Refuel Position One-Rod-Out Interlock,") 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 prescribed in the applicable Special Operations LCOs, provide mitigation of potential reactivity excursions.

ACTIONS

A.1

With the requirements of the LCO not met (e.g., the control rod pattern is not in compliance with the special test sequence, the sequence is improperly loaded in the RWM) the testing is required to be immediately suspended. Upon suspension of the special test, the provisions of LCO 3.1.6 are no longer excepted, and appropriate actions are to be taken to restore the control rod sequence to the prescribed sequence of LCO 3.1.6, or to shut down the reactor, if required by LCO 3.1.6.

SURVEILLANCE REQUIREMENTS

SR 3.10.6.1

With the special test sequence not programmed into the RWM, a second licensed operator (Reactor Operator or Senior Reactor Operator) or other task qualified member of the technical staff (e.g., shift technical advisor or reactor engineer) is required to verify conformance with the approved sequence for the test. This verification must be performed during control rod movement to prevent deviations from the specified sequence. A Note is added to indicate that this Surveillance does not need to be met if SR 3.10.6.2 is satisfied.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.10.6.2

When the RWM provides conformance to the special test sequence, the test sequence must be verified to be correctly loaded into the RWM prior to control rod movement. This Surveillance demonstrates compliance with SR 3.3.2.1.8, thereby demonstrating that the RWM is OPERABLE. A Note has been added to indicate that this Surveillance does not need to be met if SR 3.10.6.1 is satisfied.

REFERENCES

1. UFSAR, Section 15.4.10.

2. XN-NF-80-19(P)(A), Volume 1, Supplement 2, Section 7.1, Exxon Nuclear Methodology for Boiling Water Reactor Neutronics Methods for Design Analysis, (as specified in Technical Specification 5.6.5).

3. NEDE-24011-P-A-US, General Electric Standard Application for Reactor Fuel, (as specified in Technical Specification 5.6.5).

4. Letter from T. Pickens (BWROG) to G.C. Lainas (NRC) "Amendment 17 to General Electric Licensing Topical Report NEDE-24011-P-A," BWROG-8644, August 15, 1986.

5. NFSR-0091, Benchmark of CASMO/MICROBURN BWR Nuclear Design Methods, Commonwealth Edison Topical Report, (as specified in Technical Specification 5.6.5).

B 3.10 SPECIAL OPERATIONS

B 3.10.7 SHUTDOWN MARGIN (SDM) Test - Refueling

BASES

BACKGROUND	The purpose of this MODE 5 Special Operations LCO is to permit SDM testing to be performed for those plant configurations in which the reactor pressure vessel (RPV) head is either not in place or the head bolts are not fully tensioned. LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," requires that adequate SDM be demonstrated following fuel movements or control rod replacement within the RPV. The demonstration must be performed prior to or within 4 hours after criticality is reached. This SDM test may be performed prior to or during the first startup following the refueling. Performing the SDM test prior to startup requires the test to be performed while in MODE 5, with the vessel head bolts less than fully tensioned (and possibly with the vessel head removed). While in MODE 5, the reactor mode switch is required to be in the shutdown or refuel position, where the applicable control rod blocks ensure that the reactor will not become critical. The SDM test requires the reactor mode switch to be in the startup/hot standby position, since more than one control rod will be withdrawn for the purpose of demonstrating adequate SDM. This Special Operations LCO provides the appropriate additional controls to allow withdrawing more than one control rod from a core cell containing one or more fuel assemblies when the reactor vessel head bolts are less than fully tensioned.
APPLICABLE SAFETY ANALYSES	Prevention and mitigation of unacceptable reactivity excursions during control rod withdrawal, with the reactor mode switch in the startup/hot standby position while in MODE 5, is provided by the intermediate range monitor (IRM) neutron flux scram (LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation"), and control rod block instrumentation (LCO 3.3.2.1, "Control Rod Block Instrumentation"). The limiting reactivity excursion during startup conditions while in MODE 5 is the control rod drop accident (CRDA).

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

CRDA analyses assume that the reactor operator follows prescribed withdrawal sequences. For SDM tests performed within these defined sequences, the analyses of References 1, 2, 3, 4, and 5 is applicable. However, for some sequences developed for the SDM testing, the control rod patterns assumed in the safety analyses of References 1, 2, 3, 4, and 5 may not be met. Therefore, special CRDA analyses, performed in accordance with an NRC approved methodology, are required to demonstrate the SDM test sequence will not result in unacceptable consequences should a CRDA occur during the testing. For the purpose of this test, the protection provided by the normally required MODE 5 applicable LCOs, in addition to the requirements of this LCO, will maintain normal test operations as well as postulated accidents within the bounds of the appropriate safety analyses (Refs. 1, 2, 3, 4, and 5). In addition to the added requirements for the RWM, APRM, and control rod coupling, the notch out mode is specified for out of sequence withdrawals. Requiring the notch out mode limits withdrawal steps to a single notch, which limits inserted reactivity, and allows adequate monitoring of changes in neutron flux, which may occur during the test.

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) 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. SDM tests may be performed while in MODE 2, in accordance with Table 1.1-1, without meeting this Special Operations LCO or its ACTIONS. For SDM tests performed while in MODE 5, additional requirements must be met to ensure that adequate protection against potential reactivity excursions is available. To provide additional scram protection, beyond the normally required IRMs, the APRMs are also required to be OPERABLE (LCO 3.3.1.1, Functions 2.a and 2.d as though the reactor were in MODE 2. Because multiple control rods will be withdrawn and the reactor will potentially become critical, the approved control rod withdrawal sequence must be enforced by the RWM

(continued)

BASES

LCO (continued)

(LCO 3.3.2.1, Function 2, MODE 2), or must be verified by a second licensed operator (Reactor Operator or Senior Reactor Operator) or other task qualified member of the technical staff (e.g., a shift technical advisor or reactor engineer). To provide additional protection against an inadvertent criticality, control rod withdrawals that do not conform to the analyzed rod position sequence specified in LCO 3.1.6, "Rod Pattern Control," (i.e., out of sequence control rod withdrawals) must be made in the individual notched withdrawal mode to minimize the potential reactivity insertion associated with each movement. Coupling integrity of withdrawn control rods is required to minimize the probability of a CRDA and ensure proper functioning of the withdrawn control rods, if they are required to scram. Because the reactor vessel head may be removed during these tests, no other CORE ALTERATIONS may be in progress. Furthermore, since the control rod scram function with the RCS at atmospheric pressure relies solely on the CRD accumulator, it is essential that the CRD charging water header remain pressurized. This Special Operations LCO then allows changing the Table 1.1-1 reactor mode switch position requirements to include the startup/hot standby position, such that the SDM tests may be performed while in MODE 5.

APPLICABILITY

These SDM test Special Operations requirements are only applicable if the SDM tests are to be performed while in MODE 5 with the reactor vessel head removed or the head bolts not fully tensioned. Additional requirements during these tests to enforce control rod withdrawal sequences and restrict other CORE ALTERATIONS provide protection against potential reactivity excursions. Operations in all other MODES are unaffected by this LCO.

ACTIONS

A.1 and A.2

With one or more control rods discovered uncoupled during this Special Operation, a controlled insertion of each uncoupled control rod is required; either to attempt recoupling, or to preclude a control rod drop. This controlled insertion is preferred since, if the control rod fails to follow the drive as it is withdrawn (i.e., is "stuck" in an inserted position), placing the reactor mode

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

switch in the shutdown position per Required Action B.1 could cause substantial secondary damage. If recoupling is not accomplished, operation may continue, provided the control rods are fully inserted within 3 hours and disarmed (electrically or hydraulically) within 4 hours. Inserting a control rod ensures the shutdown and scram capabilities are not adversely affected. The control rod is disarmed to prevent inadvertent withdrawal during subsequent operations. The control rods can be hydraulically disarmed by closing the drive water and exhaust water isolation valves. Electrically the control rods can be disarmed by disconnecting power from all four directional control valve solenoids. Required Action A.1 is modified by a Note that allows the RWM to be bypassed if required to allow insertion of the inoperable control rods and continued operation. LCO 3.3.2.1, "Control Rod Block Instrumentation," Actions provide additional requirements when the RWM is bypassed to ensure compliance with the CRDA analysis.

The allowed Completion Times are reasonable, considering the small number of allowed inoperable control rods, and provide time to insert and disarm the control rods in an orderly manner and without challenging plant systems.

Condition A is modified by a Note allowing separate Condition entry for each uncoupled control rod. This is acceptable since the Required Actions for this Condition provide appropriate compensatory actions for each uncoupled control rod. Complying with the Required Actions may allow for continued operation. Subsequent uncoupled control rods are governed by subsequent entry into the Condition and application of the Required Actions.

B.1

With one or more of the requirements of this LCO not met for reasons other than an uncoupled control rod, the testing should be immediately stopped by placing the reactor mode switch in the shutdown or refuel position. This results in a condition that is consistent with the requirements for MODE 5 where the provisions of this Special Operations LCO are no longer required.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.10.7.1, SR 3.10.7.2, and SR 3.10.7.3

LCO 3.3.1.1, Functions 2.a and 2.d, made applicable in this Special Operations LCO, are required to have applicable Surveillances met to establish that this Special Operations LCO is being met (SR 3.10.7.1). However, the control rod withdrawal sequences during the SDM tests may be enforced by the RWM (LCO 3.3.2.1, Function 2, MODE 2 requirements) or by a second licensed operator (Reactor Operator or Senior Reactor Operator) or other task qualified member of the technical staff (e.g., a shift technical advisor or reactor engineer). As noted, either the applicable SRs for the RWM (LCO 3.3.2.1) must be satisfied according to the applicable Frequencies (SR 3.10.7.2), or the proper movement of control rods must be verified (SR 3.10.7.3). This latter verification (i.e., SR 3.10.7.3) must be performed during control rod movement to prevent deviations from the specified sequence. These surveillances provide adequate assurance that the specified test sequence is being followed.

SR 3.10.7.4

Periodic verification of the administrative controls established by this LCO will ensure that the reactor is operated within the bounds of the safety analysis. The 12 hour Frequency is intended to provide appropriate assurance that each operating shift is aware of and verifies compliance with these Special Operations LCO requirements.

SR 3.10.7.5

Coupling verification is performed to ensure the control rod is connected to the control rod drive mechanism and will perform its intended function when necessary. The verification is required to be performed any time a control rod is withdrawn to the "full-out" notch position, or prior to declaring the control rod OPERABLE after work on the control rod or CRD System that could affect coupling. This Frequency is acceptable, considering the low probability that a control rod will become uncoupled when it is not being moved as well as operating experience related to uncoupling events.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.10.7.6

CRD charging water header pressure verification is performed to ensure the motive force is available to scram the control rods in the event of a scram signal. Since the reactor is depressurized in MODE 5, there is insufficient reactor pressure to scram the control rods. Verification of charging water header pressure ensures that if a scram were required, capability for rapid control rod insertion would exist. The minimum pressure of 940 psig is well below the expected pressure of approximately 1500 psig while still ensuring sufficient pressure for rapid control rod insertion. The 7 day Frequency has been shown to be acceptable through operating experience and takes into account indications available in the control room.

REFERENCES

1. UFSAR, Section 15.4.10.

2. XN-NF-80-19(P)(A), Volume 1, Supplement 2, Section 7.1, Exxon Nuclear Methodology for Boiling Water Reactor Neutronics Methods for Design Analysis, (as specified in Technical Specification 5.6.5).

3. NEDE-24011-P-A-US, General Electric Standard Application for Reactor Fuel, (as specified in Technical Specification 5.6.5).

4. Letter from T. Pickens (BWROG) to G.C. Lainas (NRC) "Amendment 17 to General Electric Licensing Topical Report NEDE-24011-P-A," BWROG-8644, August 15, 1986.

5. NFSR-0091, Benchmark of CASMO/MICROBURN BWR Nuclear Design Methods, Commomwealth Edison Topical Report, (as specified in Technical Specification 5.6.5).

A.1

See ITS Chapter 1.0

TABLE 1-2

OPERATIONAL MODES

MODE	MODE SWITCH POSITION(f)	AVERAGE REACTOR COOLANT TEMPERATURE
1. POWER OPERATION	Run	Any temperature
2. STARTUP	Startup/Hot Standby	Any temperature
3. HOT SHUTDOWN	Shutdown(a,e)	> 212°F(d)
4. COLD SHUTDOWN	Shutdown(a,b,e)	≤ 212°F
5. REFUELING(c)	Shutdown or Refuel(a,d)	≤ 140°F

L.1

in Core Cells containing one or more fuel assemblies

add proposed LCO 3.10.1.b

TABLE NOTATIONS

Applicability of MODES 3, 4, and 5

LCO 3.10.1

(a) The reactor mode switch may be placed in the Run, Startup/Hot Standby or Refuel position to test the switch interlock functions provided the control rods ~~are verified to~~ remain fully inserted ~~by a second licensed operator or other technically qualified individual.~~ LA.1

(b) The reactor mode switch may be placed in the Refuel position while a single control rod drive is being removed from the reactor pressure vessel per Specification 3.10.I.

(c) Fuel in the reactor vessel with one or more vessel head closure bolts less than fully tensioned or with the head removed.

(d) See Special Test Exceptions 3.12.A, 3.12.B and 3.12.C.

(e) The reactor mode switch may be placed in the Refuel position while a single control rod is being moved provided the one-rod-out interlock is OPERABLE.

(f) When there is no fuel in the reactor vessel, the reactor is considered not to be in any OPERATIONAL MODE. The reactor mode switch may then be in any position or may be inoperable.

add proposed ACTION and Surveillance Requirements M.1

A.1

See ITS 3.9.1 and ITS 3.9.2

3.10 - LIMITING CONDITIONS FOR OPERATION

A. Reactor Mode Switch

The reactor mode switch shall be OPERABLE and locked in the Shutdown or Refuel position. When the reactor mode switch is locked in the Refuel position:

1. A control rod shall not be withdrawn unless the Refuel position one-rod-out interlock is OPERABLE.

2. CORE ALTERATION(s) shall not be performed using equipment associated with a Refuel position interlock unless at least the following associated Refuel position interlocks are OPERABLE for such equipment.

   a. All rods in.
   b. Refuel platform position.
   c. Refuel platform hoists fuel-loaded.
   d. Fuel grapple position.

APPLICABILITY:

OPERATIONAL MODE(s) 3[a], 4[a] and 5[b][c].

ACTION:

1. With the reactor mode switch not locked in the Shutdown or Refuel position as specified, suspend CORE ALTERATION(s) and lock the reactor mode switch in the Shutdown or Refuel position.

4.10 - SURVEILLANCE REQUIREMENTS

A. Reactor Mode Switch

1. The reactor mode switch shall be verified to be locked in the Shutdown or Refuel position as specified:

   a. Within 2 hours prior to:

      1. Beginning CORE ALTERATION(s), and

      2. Resuming CORE ALTERATION(s) when the reactor mode switch has been unlocked.

   b. At least once per 12 hours.

LCO 3.10.1

2. Each of the required reactor mode switch Refuel position interlocks[d] shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST within 24 hours prior to the start of and at least once per 7 days during control rod withdrawal or CORE ALTERATION(s), as applicable.

LCO 3.10.1

3. Each of the required reactor mode switch Refuel position interlocks[d] that is affected shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST prior to resuming control rod withdrawal or

---

a When the reactor mode switch is in the Refuel position.

b See Special Test Exceptions 3.12.A and 3.12.B.

c The reactor shall be maintained in OPERATIONAL MODE 5 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

LCO 3.10.1 d The reactor mode switch may be placed in the Run or Startup/Hot Standby position to test the switch interlock functions provided that all control rods ~~are verified to~~ remain fully inserted ~~by a second licensed operator or other technically qualified individual~~.

LA.1

Applicability of MODES 3, 4, and 5

add proposed LCO 3.10.2.b

in core cells containing one or more fuel assemblies

L.1

add proposed ACTION and Surveillance Requirements

M.1

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Technical Specification (ISTS)).

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 An appropriate ACTION is included to identify the Required Actions and Completion Times for noncompliance with Special Operation ITS 3.10.1 (CTS Table 1-2 footnote (a), and CTS 4.10.A.2 and 4.10.A.3 footnote d). Also, Surveillance Requirements are added to provide increased assurance of continued compliance with Special Operations ITS 3.10.1. Since no appropriate ACTION or Surveillance Requirements were previously identified in CTS Table 1-2 footnote (a), or footnote d of CTS 4.10.A.2 and CTS 4.10.A.3, this change is considered more restrictive.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The details of CTS Table 1-2 footnote (a), and CTS 4.10.A.2 and 4.10.A.3 footnote d, concerning the method used to verify control rods remain fully inserted (by verification using a second licensed operator or other technically qualified individual) are proposed to be relocated to the Bases. These details are not necessary to ensure control rods remain fully inserted. Proposed SR 3.10.1.1, which requires verifying control rods are fully inserted once per 12 hours, is adequate for ensuring control rods remain inserted. Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

"Specific"

L.1 CTS Table 1-2 footnote (a), and CTS 4.10.A.2 and 4.10.A.3 footnote d, allow reactor mode switch interlock testing in MODES 3, 4, and 5, provided all control rods remain fully inserted. ITS LCO 3.10.1 allows reactor mode switch interlock testing to be conducted even if control rod(s) are not fully inserted, provided these non-fully inserted control rods are in cells containing no fuel assemblies. With one or more cells in this configuration, the overall SHUTDOWN MARGIN (SDM) is greater than when all control rods and all fuel assemblies are inserted. The allowance of CTS 3.10.J (ITS 3.10.5) provides for additional reactivity insertions (control rod removal) if all fuel assemblies in the control cell are removed. The relaxation proposed by this change acknowledges this allowance (made for reasons other than reactor mode switch interlock testing), by allowing the same rationale to be applied for reactor mode switch interlock testing. In this instance, no additional positive reactivity insertion (e.g., control rod withdrawal) is allowed due to the addition of the restriction "no CORE ALTERATIONS are in progress" (ITS 3.10.1.b).

RELOCATED SPECIFICATIONS

None

TABLE 1-2

OPERATIONAL MODES

MODE	MODE SWITCH POSITION[f]	AVERAGE REACTOR COOLANT TEMPERATURE
1. POWER OPERATION	Run	Any temperature
2. STARTUP	Startup/Hot Standby	Any temperature
3. HOT SHUTDOWN	Shutdown[a,e]	> 212°F[d]
4. COLD SHUTDOWN	Shutdown[a,b,e]	≤ 212°F
5. REFUELING[c]	Shutdown or Refuel[a,e]	≤ 140°F

See ITS Chapter 1.0

TABLE NOTATIONS

(a) The reactor mode switch may be placed in the Run, Startup/Hot Standby or Refuel position to test the switch interlock functions provided the control rods are verified to remain fully inserted by a second licensed operator or other technically qualified individual.

(b) The reactor mode switch may be placed in the Refuel position while a single control rod drive is being removed from the reactor pressure vessel per Specification 3.10.I.

(c) Fuel in the reactor vessel with one or more vessel head closure bolts less than fully tensioned or with the head removed.

Applicability of MODE 3

(d) See Special Test Exceptions 3.12.A, 3.12.B and 3.12.C.

LCO 3.10.2

(e) The reactor mode switch may be placed in the Refuel position while a single control rod is being moved provided the one-rod-out interlock is OPERABLE.

LCO 3.10.2.a

(f) When there is no fuel in the reactor vessel, the reactor is considered not to be in any OPERATIONAL MODE. The reactor mode switch may then be in any position or may be inoperable.

add proposed LCO 3.10.2.b, c, and d

M.1

add proposed ACTION and SRs 3.10.2.2 and 3.10.2.3

Add proposed SR 3.10.2.1

3.10 - LIMITING CONDITIONS FOR OPERATION

A. Reactor Mode Switch

LCO 3.10.2 The reactor mode switch shall be OPERABLE and locked in the Shutdown or Refuel position. When the reactor mode switch is locked in the Refuel position:

L.1

LCO 3.10.2.a 1. A control rod shall not be withdrawn unless the Refuel position one-rod-out interlock is OPERABLE.

2. CORE ALTERATION(s) shall not be performed using equipment associated with a Refuel position interlock unless at least the following associated Refuel position interlocks are OPERABLE for such equipment.

   a. All rods in.
   b. Refuel platform position.
   c. Refuel platform hoists fuel-loaded.
   d. Fuel grapple position.

APPLICABILITY:

OPERATIONAL MODE(s) 3[a], 4[a] and 5[a(b)(c)].

ACTION:

1. With the reactor mode switch not locked in the Shutdown or Refuel position as specified, suspend CORE ALTERATION(s) and lock the reactor mode switch in the Shutdown or Refuel position.

4.10 - SURVEILLANCE REQUIREMENTS

A. Reactor Mode Switch

1. The reactor mode switch shall be verified to be locked in the Shutdown or Refuel position as specified:

   L.1

   a. Within 2 hours prior to:

      1. Beginning CORE ALTERATION(s), and

      2. Resuming CORE ALTERATION(s) when the reactor mode switch has been unlocked.

   b. At least once per 12 hours.

2. Each of the required reactor mode switch Refuel position interlocks[d] shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST within 24 hours prior to the start of and at least once per 7 days during control rod withdrawal or CORE ALTERATION(s), as applicable.

A.3

3. Each of the required reactor mode switch Refuel position interlocks[d] that is affected shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST prior to resuming control rod withdrawal or

See ITS 3.9.1 and ITS 3.9.2

Applicability a When the reactor mode switch is in the Refuel position.

b See Special Test Exceptions 3.12.A and 3.12.B.

c The reactor shall be maintained in OPERATIONAL MODE 5 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

d The reactor mode switch may be placed in the Run or Startup/Hot Standby position to test the switch interlock functions provided that all control rods are verified to remain fully inserted by a second licensed operator or other technically qualified individual.

3.10 - LIMITING CONDITIONS FOR OPERATION

A.2 place

Required Action A.2.2

2. With the one-rod-out interlock inoperable, ~~lock~~ the reactor mode switch in the Shutdown position.

3. With any of the above required Refuel position equipment interlocks inoperable, suspend CORE ALTERATION(s) with equipment associated with the inoperable Refuel position equipment interlock.

See ITS 3.9.1 and ITS 3.9.2

4.10 - SURVEILLANCE REQUIREMENTS

CORE ALTERATION(s), as applicable, following repair, maintenance or replacement of any component that could affect the Refuel position interlock.

A.3

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Technical Specification (ISTS)).

A.2 CTS 3.10.A Action 2 requires the reactor mode switch to be locked in the Shutdown position when the one-rod-out interlock is inoperable. The CTS 3.10.A Applicability, as it relates to ITS 3.10.2, is MODE 3 when the reactor mode switch is in the Refuel position. Thus, once the reactor mode switch is moved from the Refuel position to the Shutdown position, the LCO is no longer applicable, and the mode switch does not have to be locked (since, according to CTS 3.0.A and proposed LCO 3.0.1, the LCO is only required to be met during the MODES or other specified conditions in the Applicability. Therefore, ITS 3.10.2, Required Action A.2.2 only requires the mode switch to be placed in Shutdown; locking the mode switch in Shutdown is not required. Since this is consistent with the current requirement, this change is considered administrative.

A.3 The refuel position one-rod-out interlock Surveillances (CTS 4.10.A.1, 4.10.A.2, and 4.10.A.3) have been replaced with a generic Surveillance Requirement (proposed SR 3.10.2.1) to perform all required Surveillances in accordance with the applicable SRs; in this case, with the SRs of ITS 3.9.2, Refuel Position One-Rod-Out Interlock. Since ITS 3.10.2 requires the refuel position one-rod-out interlock to be OPERABLE in accordance with ITS 3.9.2, the proposed Surveillance Requirements should be those required by ITS 3.9.2. The format of the BWR ISTS, NUREG-1433, Rev. 1, uses a generic Surveillance Requirement (proposed SR 3.10.2.1) to specify required Surveillance of other LCOs. Any changes to these current Surveillance Requirements will be addressed in the Discussion of Changes for ITS: 3.9.2.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS Table 1-2 footnote (e) provides an allowance to withdraw a single control rod while in MODE 3 provided the one-rod-out interlock is Operable. However, ITS 3.10.2 has additional restrictions applied. The existing requirement has no specific requirement for this control rod to be capable of scram insertion (control rod OPERABILITY and CRD Accumulator LCOs are not applicable) to protect the core from the consequences of an inadvertent reactivity excursion.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 (cont'd) Furthermore, the Reactor Protection System (RPS) requirements do not currently require the trip on Scram Discharge Volume (SDV) during this condition. The proposed change incorporates additional restrictions to address these issues. The option is provided in the proposed change to have OPERABLE RPS SDV trip and an OPERABLE control rod (ITS LCO 3.10.2 Item d.1), or to appropriately preclude the possibility of a local reactivity excursion (ITS 3.10.2 LCO Item d.2). In addition, the IRM, Reactor Mode Switch Shutdown Position, and Manual Scram RPS Functions of ITS 3.3.1.1 (Functions 1.a, 1.b, 11, and 12) are also required to be OPERABLE by ITS 3.10.2 LCO Item d.1, as is currently required by CTS 3.1.A, Table 3.1.A-1 (Functional Units 1.a, 1.b, 13, and 14). The administrative controls required in this latter option (item d.2) are those currently licensed in CTS 3.10.I.3 and 4 for similar operations in the Refuel MODE. To support the scram function, MODE 5 requirements of ITS 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," and ITS 3.9.5, "Control Rod OPERABILITY — Refueling" are included (ITS 3.10.2 Item d.1) to ensure the RPS will perform its required safety function. In addition, the control rod position indication must be OPERABLE to support the one-rod-out interlock (ITS 3.10.2 LCO Item b) and all other control rods must be fully inserted (ITS 3.10.2 LCO Item c) to ensure an inadvertent criticality will not occur.

Furthermore, an ACTION and Surveillance Requirements (proposed SR 3.10.2.2 and 3.10.2.3) are also provided in the proposed presentation for these allowances. The added ACTION will ensure appropriate operator response in the event one or more requirements become not met during the evolution. Specific Surveillance Requirements will ensure appropriate periodic confirmation of the required controls. These changes are additional restrictions on plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

None

TECHNICAL CHANGES - LESS RESTRICTIVE

"Specific"

L.1 The CTS 3.10.A and CTS 4.10.A.1 requirement to "lock" the reactor mode switch in Refuel is proposed to be deleted. Movement of the reactor mode switch from the Refuel position is adequately controlled by ITS Table 1.1-1 and this proposed Specification. A reactor mode switch position other than Refuel would result in exiting this special test exception; with the associated Technical Specification compliance requirements of the given MODE (more than likely MODE 3 with the reactor mode switch position in Shutdown). In addition, this is a special test exception, and it is not normal to have the reactor mode switch in Refuel. Locking the reactor mode switch in Refuel would require additional actions by the operators to return it to the normal position (Shutdown). Also, to exit the LCO, the reactor mode switch needs to be unlocked to move it to the Shutdown position; but the action of unlocking the reactor mode switch would result in noncompliance with the LCO.

RELOCATED SPECIFICATIONS

None

3.10 - LIMITING CONDITIONS FOR OPERATION

I. Single Control Rod Removal

LCO 3.10.3 One control rod and/or the associated control rod drive mechanism may be removed from the core ~~and/or reactor pressure vessel~~ provided that at least the following requirements are satisfied ~~until a control rod and associated control rod drive mechanism are reinstalled and the control rod is fully inserted in the core~~. A.2

L.1

1. The reactor mode switch is ~~OPERABLE and locked~~ in the Shutdown position or in the Refuel position ~~per Table 1-2 and Specification 3.10.A~~.

A.3 ~~2. The source range monitors (SRM) are OPERABLE per Specification 3.10.B.~~

L.2 add proposed LCO 3.10.3.c.1

LCO 3.10.3.c.2 3. The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied, except that the control rod selected to be removed;

a. May be assumed to be the highest worth control rod ~~required to be assumed to be fully withdrawn by the SHUTDOWN MARGIN test, and~~ A.4

~~b. Need not be assumed to be immovable or unscrammable.~~

4. All other control rods in a five-by-five array centered on the control rod being removed are either:

LA.1

LCO 3.10.3.a a. Fully inserted and ~~electrically or hydraulically~~ ~~disarmed, or~~

LCO 3.10.3.c.2

A.5 ~~b. The four fuel assemblies surrounding the control rod or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.~~

4.10 - SURVEILLANCE REQUIREMENTS

I. Single Control Rod Removal

SR 3.10.3.2 and SR 3.10.3.3 ~~Within 4 hours prior to the start of removal of a control rod and/or the associated control rod drive mechanism from the core and/or reactor pressure vessel and at least~~ once per 24 hours thereafter ~~until a control rod and associated control drive mechanism are reinstalled and the control rod is fully inserted in the core,~~ verify that: L.3 A.2

1. ~~The reactor mode switch is OPERABLE per Surveillance Requirement 4.1.A.1 or 4.10.A.2, as applicable, and locked in the Shutdown position or in the Refuel position with~~ the "one-rod-out" L.1

SR 3.10.3.1 Refuel position interlock OPERABLE per Specification 3.10.A.

~~2. The SRM CHANNEL(s) are OPERABLE per Specification 3.10.B.~~ A.3

SR 3.10.3.1 3. The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied per Specification 3.10.I.3.

add proposed 3.10.3.2 Note A.6

SR 3.10.3.2 4. All other control rods in a five-by-five array centered on the control rod being removed are either:

SR 3.10.3.2 SR 3.10.3.3 a. Fully inserted and ~~electrically or hydraulically~~ disarmed, or LA.1

~~b. The four fuel assemblies surrounding the control rod or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.~~ A.5

SR 3.10.3.3 5. All other control rods are fully inserted.

Add proposed SR 3.10.3.1 and SR 3.10.3.4 L.2

See ITS 3.10.4

3.10 - LIMITING CONDITIONS FOR OPERATION

4.10 - SURVEILLANCE REQUIREMENTS

LCO 3.10.3.a 5. All other control rods are fully inserted.

APPLICABILITY:

OPERATIONAL MODE(s) 4 and 5.

see ITS 3.10.4

add proposed ACTIONS Note A.6

A.7 **ACTION:**

add proposed Required Action A.1 Notes

ACTIONS A and B

With the requirements of the above specification not satisfied, suspend removal of the control rod and/or associated control rod drive mechanism from the core and/or reactor pressure vessel and initiate ACTION to satisfy the above requirements.

add proposed Required Actions A.2.1, A.2.2, and B.2.1 M.1

A.1

TABLE 1-2

OPERATIONAL MODES

MODE	MODE SWITCH POSITION[f]	AVERAGE REACTOR COOLANT TEMPERATURE
1. POWER OPERATION	Run	Any temperature
2. STARTUP	Startup/Hot Standby	Any temperature
3. HOT SHUTDOWN	Shutdown[a,e]	> 212°F[d]
4. COLD SHUTDOWN	Shutdown[a,b,e]	≤ 212°F
5. REFUELING[c]	Shutdown or Refuel[a,e]	≤ 140°F

See ITS Chapter 1.0

TABLE NOTATIONS

(a) The reactor mode switch may be placed in the Run, Startup/Hot Standby or Refuel position to test the switch interlock functions provided the control rods are verified to remain fully inserted by a second licensed operator or other technically qualified individual.

Applicability of MODE 4

LCO 3.10.3

LCO 3.10.3.b.1

(b) The reactor mode switch may be placed in the Refuel position while a single control rod drive is being removed from the reactor pressure vessel per Specification 3.10.I.

(c) Fuel in the reactor vessel with one or more vessel head closure bolts less than fully tensioned or with the head removed.

(d) See Special Test Exceptions 3.12.A, 3.12.B and 3.12.C.

LCO 3.10.3

LCO 3.10.3.b.1

(e) The reactor mode switch may be placed in the Refuel position while a single control rod is being moved provided the one-rod-out interlock is OPERABLE.

(f) When there is no fuel in the reactor vessel, the reactor is considered not to be in any OPERATIONAL MODE. The reactor mode switch may then be in any position or may be inoperable.

add proposed LCO 3.10.3.b.2

add proposed LCO 3.10.3.b.1, control rod position indication requirement

L.2

M.2

3.10 - LIMITING CONDITIONS FOR OPERATION

A. Reactor Mode Switch

L.1

LCO 3.10.3

The reactor mode switch shall be OPERABLE ~~and locked~~ in the Shutdown or Refuel position. When the reactor mode switch is locked in the Refuel position:

1. A control rod shall not be withdrawn unless the Refuel position one-rod-out interlock is OPERABLE.

2. CORE ALTERATION(s) shall not be performed using equipment associated with a Refuel position interlock unless at least the following associated Refuel position interlocks are OPERABLE for such equipment.

   a. All rods in.
   b. Refuel platform position.
   c. Refuel platform hoists fuel-loaded.
   d. Fuel grapple position.

APPLICABILITY:

OPERATIONAL MODE(s) 3[(a)], 4[(a)] and 5[(b)(c)].

ACTION:

1. With the reactor mode switch not locked in the Shutdown or Refuel position as specified, suspend CORE ALTERATION(s) and lock the reactor mode switch in the Shutdown or Refuel position.

4.10 - SURVEILLANCE REQUIREMENTS

A. Reactor Mode Switch

add proposed SR 3.10.3.1

L.1

1. The reactor mode switch shall be verified to be locked in the Shutdown or Refuel position as specified:

   a. Within 2 hours prior to:

      1. Beginning CORE ALTERATION(s), and

      2. Resuming CORE ALTERATION(s) when the reactor mode switch has been unlocked.

   b. At least once per 12 hours.

A.8

2. Each of the required reactor mode switch Refuel position interlocks[(d)] shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST within 24 hours prior to the start of and at least once per 7 days during control rod withdrawal or CORE ALTERATION(s), as applicable.

3. Each of the required reactor mode switch Refuel position interlocks[(d)] that is affected shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST prior to resuming control rod withdrawal or

See ITS 3.9.1

Applicability

a When the reactor mode switch is in the Refuel position.

b See Special Test Exceptions 3.12.A and 3.12.B.

c The reactor shall be maintained in OPERATIONAL MODE 5 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

d The reactor mode switch may be placed in the Run or Startup/Hot Standby position to test the switch interlock functions provided that all control rods are verified to remain fully inserted by a second licensed operator or other technically qualified individual.

3.10 - LIMITING CONDITIONS FOR OPERATION

A.9 — place

Required ACTION A.2.2

2. With the one-rod-out interlock inoperable, lock the reactor mode switch in the Shutdown position.

3. With any of the above required Refuel position equipment interlocks inoperable, suspend CORE ALTERATION(s) with equipment associated with the inoperable Refuel position equipment interlock.

See ITS 3.9.1

4.10 - SURVEILLANCE REQUIREMENTS

CORE ALTERATION(s), as applicable, following repair, maintenance or replacement of any component that could affect the Refuel position interlock. — A.8

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

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Technical Specification (ISTS)).

A.2 CTS 3.10.I and 4.10.I contain statements that require compliance with the Specification "until a control rod and associated control rod drive mechanism are reinstalled and the control rod is fully inserted in the core." This statement in CTS 3.10.I and 4.10.I is fundamentally true for all Specifications and does not need to be stated in each individual Specification. CTS 3.0.B specifies that requirements apply until conditions under which they are required to apply no longer exist. Therefore, deleting this statement is only an editorial preference.

A.3 CTS 3.10.I.2 requires the SRM requirements of CTS 3.10.B to be met during a single control rod withdrawal when in MODE 4. The requirements of CTS 3.10.B are normally applicable in MODE 5. CTS 3.2.G provides the SRM requirements when in MODE 4. These requirements are essentially equivalent to the MODE 5 requirements (e.g., two SRMs are required to be Operable and Channel Checks, Channel Functional Tests, and Channel Calibrations are required to demonstrate Operability). The current MODE 4 requirements for SRM OPERABILITY in CTS 3.2.G and Surveillance testing in CTS 4.2.G are adequate without explicit reference to them. ITS 3.10.3 does not modify the normal SRM requirements in MODE 4, and therefore, CTS 3.2.G (ITS 3.3.1.2) must also be met during this Special Operation. The CTS 3.10.I.2 and 4.10.I.2 references are redundant to the current and proposed requirement, and therefore, have been deleted.

A.4 CTS 3.10.I.3.a and CTS 3.10.I.3.b are actually clarifications of a single thought. They are referring to an exception to the current normal SDM requirements, which requires additional margin for immoveable control rods. ITS 3.10.3 does not include the last half of existing 3.a or any of the existing 3.b, but only identifies that the withdrawn rod is considered to be the "highest worth control rod," which in the CTS definition and in the ITS definition of SHUTDOWN MARGIN is assumed to be fully withdrawn. Since the rod need only be considered once in the SDM calculations, this rod is not required to also be considered as a stuck rod and the additional wording is unnecessary.

ADMINISTRATIVE (continued)

A.5 CTS 3.10.I.4.b and 4.10.I.4.b allow the four fuel assemblies surrounding the control rod or control rod drive mechanism to be removed from the core and/or reactor vessel to be removed from the core. The CTS applies to both MODE 4 and MODE 5. During MODE 4, the optional requirement of CTS 3.10.I.4.b and 4.10.I.4.b cannot be physically met, and therefore it is not included in ITS 3.10.3.

A.6 Four new Notes have been added for clarity in ITS 3.10.3. The ITS 3.10.3 ACTIONS Note has been added to clarify that the requirement to enter the applicable condition of the affected Specification applies for each of the affected Specifications (as shown in CTS 3.10.I, there are three potentially affected Specifications (CTS 3.10.A, 3.10.B, and 3.3.A)). ITS 3.10.3 Required Action A.1 Note 1 has been added to clarify that if an affected Specifications ACTIONS state to fully insert all insertable control rods, this includes placing the reactor mode switch in the Shutdown position. ITS 3.10.3 Required Action A.1 Note 2 has been added to clarify that this Required Action is only applicable if the requirement not met is an LCO, since it is written only for an LCO, not a "requirement" (i.e., ITS 3.10.3.b.2, insert a rod block, is a requirement). Proposed SR 3.10.3.2 Note has been added to CTS 4.10.I.4 clarifying that if proposed SR 3.10.3.1 is satisfied for ITS 3.10.3.c.1 requirements, then proposed SR 3.10.3.2 is not required to be performed (since ITS 3.10.3.2.c.1 is one option and ITS 3.10.3.2.c.2, which is verified by proposed SR 3.10.3.2, is the other option). Since these Notes have been added for clarity, they are considered administrative changes.

A.7 ITS 3.10.3 separates the CTS 3.10.I ACTION into two ACTIONS, dependent on whether the affected control rod is insertable or not. ITS 3.10.3 ACTIONS are a more detailed presentation of the existing requirement to "initiate action to satisfy the above requirements." By virtue of knowing the control rod is insertable, more explicit instruction can be given.

A.8 The refuel position one-rod-out interlock Surveillances CTS 4.10.A.1, 4.10.A.2, and 4.10.A.3 have been replaced with a generic Surveillance Requirement (proposed SR 3.10.3.1) to perform all required Surveillances in accordance with the applicable SRs; in this case, with the SRs of ITS 3.9.2, Refuel Position One-Rod-Out Interlock. Since ITS 3.10.3 requires the refuel position one-rod-out interlock to be OPERABLE in accordance with ITS 3.9.2, the proposed Surveillance Requirements should be those required by ITS 3.9.2. The format of the BWR ISTS, NUREG-1433, Rev. 1, uses a generic Surveillance Requirement (proposed SR 3.10.3.1) to specify required Surveillances of other LCOs. Any changes to these current Surveillance Requirements will be addressed in the Discussion of Changes for ITS: 3.9.2.

ADMINISTRATIVE (continued)

A.9 CTS 3.10.A Action 2 requires the reactor mode switch to be locked in the Shutdown position when the one-rod-out interlock is inoperable. The CTS 3.10.A Applicability, as it relates to ITS 3.10.3, is MODE 4 when the reactor mode switch is in the Refuel position. Thus, once the reactor mode switch is moved from the Refuel position to the Shutdown position, the LCO is no longer applicable, and the mode switch does not have to be locked (since, according to CTS 3.0.A and proposed LCO 3.0.1, the LCO is only required to be met during the MODES or other specified conditions in the Applicability). Therefore, ITS 3.10.3, Required Action A.2.2 only requires the mode switch to be placed in Shutdown; locking the mode switch in Shutdown is not required. Since this is consistent with the current requirement, this change is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 In the event requirements of ITS 3.10.3 (CTS 3.10.I) are not met and the withdrawn control rod is insertable, two additional Required Actions are provided in ITS 3.10.3 ACTION A. ITS 3.10.3 Required Action A.2.1 requires action to be initiated immediately to fully insert all insertable control rods. ITS 3.10.3 Required Action A.2.2 requires the placing of the reactor mode switch to the Shutdown position, which will preclude withdrawal of any control rod. These Required Actions will result in exiting the Applicability of the Special Operation LCO (ITS 3.10.3) and return the reactor mode switch to its required position for normal MODE 4 operation. In the event requirements of ITS 3.10.3 (CTS 3.10.I) are not met and the withdrawn control rod is not insertable, an additional Required Action is provided in ITS 3.10.3 ACTION B. ITS 3.10.3 Required Action B.2.1 requires action to be initiated immediately to fully insert all control rods. This Required Action will essentially result in exiting the Applicability of the Special Operations LCO. These proposed requirements are additional restrictions on plant operation.

M.2 CTS Table 1-2 footnote (e) provides an allowance to withdraw a single control rod while in MODE 4 provided the one-rod-out interlock is OPERABLE. However, ITS 3.10.3 has an additional restriction applied. A new requirement has been added to ensure the control rod position indication is OPERABLE (ITS LCO 3.10.3, second half of the b.1 requirements). The control rod position indication must be OPERABLE to support the one-rod-out interlock. This is an additional restriction on plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The details of the recommended procedures for disarming control rod(s) in CTS 3.10.I.4.a and 4.10.I.4.a (i.e., electrically or hydraulically) are proposed to be relocated to the Bases. These details are not necessary to ensure required control rods are disarmed. ITS 3.10.3 and SR 3.10.3.2, which require disarming of all control rods in a five by five array centered on the control rod being withdrawn, are adequate for ensuring required control rods are disarmed. As such, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

"Specific"

L.1 The requirement in CTS 3.10.I.1, 4.10.I.1, 3.10.A, and 4.10.A.1 to "lock" the reactor mode switch in Refuel and the explicit requirement for the reactor mode switch to be OPERABLE is proposed to be deleted. Reactor mode switch OPERABILITY is included as part of the OPERABILITY of various interlocks, trip functions, and control rod blocks. Furthermore, the position of the reactor mode switch is adequately controlled by the MODES definition Table (ITS Table 1.1-1). A reactor mode switch position other than Refuel would result in exiting this special test exception; with the associated Technical Specification compliance requirements of the given MODE (more than likely MODE 4 with the reactor mode switch position in Shutdown). In addition, this is a special test exception, and it is not normal to have the reactor mode switch in Refuel. Locking the reactor mode switch in Refuel would require additional actions by the operators to return it to the normal position (Shutdown). Also, to exit the LCO, the reactor mode switch needs to be unlocked to move it to the Shutdown position; but the action of unlocking the reactor mode switch would result in noncompliance with the LCO.

L.2 For removal of a control rod drive in Cold Shutdown (CTS 3.10.I), alternative requirements have been provided in ITS 3.10.3 in place of the SHUTDOWN MARGIN and control rod five-by-five array of disarming requirements of CTS 3.10.I.3 and 3.10.I.4. The alternatives require all MODE 5 RPS Functions (LCO 3.3.1.1) to be OPERABLE, and MODE 5 requirements of LCO 3.3.8.2, RPS Electric Power Monitoring, and LCO 3.9.5, Control Rod OPERABILITY — Refueling, to be made applicable (ITS LCO 3.10.3.c.1). These requirements ensure that if an inadvertent criticality occurs, the RPS will initiate a scram and the withdrawn control rods will insert. In addition, an

TECHNICAL CHANGES - LESS RESTRICTIVE

L.2 (cont'd) alternative requirement as been provided in place of the one-rod-out interlock requirement. The alternative will require a control rod withdrawal block to be inserted (ITS LCO 3.10.3.b.2). This requirement essentially ensures that no additional rods are withdrawn, similar to the one-rod-out interlock. New Surveillances have also been added to perform the applicable SRs for the required LCOs (proposed SR 3.10.3.1) if RPS Functions, and control rod OPERABILITY requirements are chosen, and to verify every 24 hours that a control rod withdrawal block is inserted (proposed SR 3.10.3.4) if the block is the chosen requirement.

L.3 The normal periodic (24 hour) Surveillance Frequency of CTS 4.10.I (proposed SR 3.10.3.1, 3.10.3.2, and 3.10.3.3) provides adequate assurance that the LCO requirements are satisfied. If any Surveillance has not been performed within this interval, control rod withdrawal and CRD removal may not be performed. Therefore, the CTS 4.10.I requirement to perform the required Surveillance once within 4 hours prior to the start of removal of a control rod or control rod drive mechanism is deleted. The normal periodic Surveillance Frequency ensures the requirements are adequately checked prior to and during control rod withdrawal or control rod drive mechanism removal operations.

RELOCATED SPECIFICATIONS

None

ITS 3.10.4

A.1

3.10 - LIMITING CONDITIONS FOR OPERATION

I. Single Control Rod Removal

LCO 3.10.4 One control rod and/or the associated control rod drive mechanism may be removed from the core and/or reactor pressure vessel provided that at least the following requirements are satisfied ~~until a control rod and associated control rod drive mechanism are reinstalled and the control rod is fully inserted in the core.~~ A.2

L.1 1. ~~The reactor mode switch is OPERABLE and locked in the Shutdown position or in the Refuel position per Table 1-2 and Specification 3.10.A.~~

A.3 2. ~~The source range monitors (SRM) are OPERABLE per Specification 3.10.B.~~

LCO 3.10.4.c 3. The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied, except that the control rod selected to be removed;

a. May be assumed to be the highest worth control rod ~~required to be assumed to be fully withdrawn by the SHUTDOWN MARGIN test, and~~

A.4 ~~b. Need not be assumed to be immovable or unscrammable.~~

LCO 3.10.4.b 4. All other control rods in a five-by-five array centered on the control rod being removed are either:

LA.1 LCO 3.10.4.a LCO 3.10.4.b a. Fully inserted and ~~electrically or hydraulically~~ disarmed, ~~or~~

A.5 ~~b. The four fuel assemblies surrounding the control rod or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.~~

M.1 add proposed LCO 3.10.4.c (first part) and LCO 3.10.4.d

4.10 - SURVEILLANCE REQUIREMENTS

I. Single Control Rod Removal

SR 3.10.4.1 SR 3.10.4.2 SR 3.10.4.4 ~~Within 4 hours prior to the start of removal of a control rod and/or the associated control rod drive mechanism from the core and/or reactor pressure vessel and~~ at least once per 24 hours thereafter ~~until a control rod and associated control drive mechanism are reinstalled and the control rod is fully inserted in the core, verify that:~~ L.2 A.2

1. ~~The reactor mode switch is OPERABLE per Surveillance Requirement 4.1.A.1 or 4.10.A.2, as applicable, and locked in the Shutdown position or in the Refuel position with the~~ "one-rod-out" Refuel position interlock OPERABLE per Specification 3.10.A. L.1 M.1

2. ~~The SRM CHANNEL(s) are OPERABLE per Specification 3.10.B.~~ A.3

SR 3.10.4.4 3. The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied per Specification 3.10.I.3.

SR 3.10.4.2 4. All other control rods in a five-by-five array centered on the control rod being removed are either:

SR 3.10.4.1 a. Fully inserted and ~~electrically or hydraulically~~ disarmed, ~~or~~ LA.1

~~b. The four fuel assemblies surrounding the control rod or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.~~ A.5

SR 3.10.4.1 5. All other control rods are fully inserted.

add proposed SR 3.10.4.3 and SR 3.10.4.5 M.1

Page 1 of 2

3.10 - LIMITING CONDITIONS FOR OPERATION | 4.10 - SURVEILLANCE REQUIREMENTS

LCO 3.10.4.a 5. All other control rods are fully inserted.

APPLICABILITY:

OPERATIONAL MODE(s) 4 and 5, with LCO 3.9.5 not met A.6

See ITS 3.10.3

ACTION:

ACTION A With the requirements of the above specification not satisfied, suspend removal of the control rod and/or associated control rod drive mechanism from the core and/or reactor pressure vessel and initiate ACTION to satisfy the above requirements.

A.7 add proposed Required Action A.2.1

DISCUSSION OF CHANGES
ITS: 3.10.4 - SINGLE CONTROL ROD DRIVE REMOVAL — REFUELING

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Technical Specification (ISTS)).

A.2 CTS 3.10.I and 4.10.I contain statements that require compliance with the Specification "until a control rod and associated control rod drive mechanism are reinstalled and the control rod is fully inserted in the core." This statement in CTS 3.10.I and 4.10.I is fundamentally true for all Specifications and does not need to be stated in each individual Specification. CTS 3.0.B specifies that requirements apply until conditions under which they are required to apply no longer exist. Therefore, deleting this statement is only an editorial preference.

A.3 The current MODE 5 requirements for SRM OPERABILITY in CTS 3.10.B and Surveillance testing in CTS 4.10.B are adequate without explicit reference to them in CTS 3.10.I.2 and CTS 4.10.I.2. ITS 3.10.4 does not modify the normal SRM requirements in MODE 5, and therefore, CTS 3.10.B (ITS 3.3.1.2) must also be met during this Special Operation (ITS 3.10.4). The CTS 3.10.I.2 and 4.10.I.2 references are redundant to the current and proposed requirements, and therefore, have been deleted.

A.4 CTS 3.10.I.3.a and CTS 3.10.I.3.b are actually clarifications of a single thought. They are referring to an exception to the current normal SDM requirements, which requires additional margin for immoveable control rods. ITS 3.10.4 does not include the last half of existing 3.a or any of existing 3.b, but only identifies that the withdrawn rod is considered to be the "highest worth control rod," which in the CTS definition and in the ITS definition of SHUTDOWN MARGIN is assumed to be fully withdrawn. Since the rod need only be considered once in the SDM calculations, this rod is not required to also be considered as a stuck rod, and the additional wording is unnecessary.

A.5 During MODE 5, if it is desired to use the CTS 3.10.I.4.b and 4.10.I.4.b allowance to remove the four fuel assemblies in lieu of inserting and disarming the control rods in a 5 x 5 array, this can be done provided the requirements of ITS 3.10.5 (CTS 3.10.J) are followed. The limitations of CTS 3.10.I are consistent with the limitations in CTS 3.10.J for this condition, therefore, the optional requirement of CTS 3.10.I.4.b and 4.10.I.4.b is not included in ITS 3.10.4.

ADMINISTRATIVE (continued)

A.6 The MODE 5 Applicability addition in ITS 3.10.4 ("with LCO 3.9.5 not met") is derived from the intent of CTS 3.10.I, which says "the associated control rod drive mechanism may be removed from ... the reactor pressure vessel..." When the control rod drive mechanism is removed, ITS 3.9.5, which requires all withdrawn control rods to be OPERABLE, is not met. Therefore, this change is considered administrative.

A.7 An alternative Required Action (ITS 3.10.4 Required Action A.2.1) has been added to the CTS 3.10.I ACTION to initiate action to fully insert all control rods immediately, in lieu of meeting the requirements of the LCO. Since this new Required Action results in effectively exiting this Special Operations LCO and restores operation consistent with normal requirements for failure to meet the LCOs which were suspended by the Special Operations LCO (i.e., all control rods inserted), it is administrative (since use of the Special Operations LCOs are optional as described in proposed LCO 3.0.7).

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 4.10.I.1 requires the "one-rod-out" refuel position interlock to be OPERABLE. Inputs to the one-rod-out interlock (rod position on the rod to be removed) must be overridden to remove the rod; thus, the one-rod-out interlock is not OPERABLE in this condition. To ensure only one rod is withdrawn, a control rod block is inserted (ITS LCO 3.10.4.c). This compensates for the inoperable one-rod-out interlock. The rod block can be inserted by placing the mode switch in shutdown, and ITS 3.3.2.1 for the control rod block functions ensures the rod blocks are OPERABLE. To ensure no fuel is loaded (since refueling interlocks would preclude fuel movement with a withdrawn control rod), no other CORE ALTERATIONS can be in progress (ITS LCO 3.10.4.d). These requirements ensure no inadvertent criticality will occur. Surveillances have been added to verify a control rod withdrawal block is inserted every 24 hours (proposed SR 3.10.4.3) and no other CORE ALTERATIONS are in progress every 24 hours (proposed SR 3.10.4.5). These Surveillance Requirements ensure the requirements of the LCO are met. These changes represent an additional restriction on plant operations.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The details of the recommended procedures for disarming control rod(s) in CTS 3.10.I.4.a and 4.10.I.4.a (i.e., electrically or hydraulically) are proposed to be relocated to the Bases. These details are not necessary to ensure required control rods are disarmed. ITS 3.10.4 and SR 3.10.4.2, which require disarming of all control rods in a five by five array centered on the control rod being withdrawn, are adequate for ensuring required control rods are disarmed. As such, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases are controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

"Specific"

L.1 The requirement in CTS 3.10.I.1 and CTS 4.10.I.1 to "lock" the reactor mode switch in Shutdown or Refuel and the explicit requirement for the reactor mode switch to be OPERABLE is proposed to be deleted. Reactor mode switch OPERABILITY is included as part of the OPERABILITY of the required interlocks and control rod blocks. Furthermore, the position of the reactor mode switch is adequately controlled by the MODES definition Table (ITS Table 1.1-1). A reactor mode switch position other than Refuel and Shutdown result in the unit entering some other MODE; with the associated Technical Specification compliance requirements of that MODE and of proposed LCO 3.0.1.

L.2 The normal periodic (24 hour) Surveillance Frequency of CTS 4.10.I (proposed SRs 3.10.4.1, 3.10.4.2, and 3.10.4.4) provides adequate assurance that the LCO requirements are satisfied. If any Surveillance has not been performed within this interval, control rod drive removal may not be performed. Therefore, the CTS 4.10.I requirement to perform the required Surveillance within 4 hours prior to the start of removal of a control rod or control rod drive mechanism is deleted. The normal periodic Surveillance Frequency ensures the requirements are adequately checked prior to and during control rod or control rod drive mechanism removal operations.

RELOCATED SPECIFICATIONS

None

A.1

3.10 - LIMITING CONDITIONS FOR OPERATION

J. Multiple Control Rod Removal

LCO 3.10.5 Any number of control rods and/or control rod drive mechanisms may be removed from the core and/or reactor pressure vessel provided that at least the following requirements are satisfied ~~until all control rods and control rod drive mechanisms are reinstalled and all control rods are fully inserted in the core~~. A.2

1. L.1 ~~The reactor mode switch is OPERABLE and locked in the Shutdown position or in the Refuel position per Specification 3/10.A,~~ except that the Refuel position "one-rod-out" interlock may be bypassed, as required, for those control rods and/or control rod drive mechanisms to be removed, after the fuel assemblies have been removed as specified below. LCO 3.10.5

2. A.3 ~~The source range monitors (SRM) are OPERABLE per Specification 3.10.B.~~

3. A.4 ~~The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied.~~

4. LCO 3.10.5.b All other control rods are either fully inserted or have the surrounding four fuel assemblies removed from the core cell.

5. LCO 3.10.5.a The four fuel assemblies surrounding each control rod or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.

M.1 add proposed LCO 3.10.5.c

A.5 APPLICABILITY:

OPERATIONAL MODE ~~5~~ with LCO 3.9.3, LCO 3.9.4, or LCO 3.9.5 not met

4.10 - SURVEILLANCE REQUIREMENTS

J. Multiple Control Rod Removal

1. ~~Within 4 hours prior to the start of removal of control rods and/or control rod drive mechanisms from the core and/or reactor pressure vessel~~ and at least once per 24 hours thereafter ~~until all control rods and control rod drive mechanisms are reinstalled and all control rods are fully inserted in the core,~~ verify that: L.2 A.2 SR 3.10.5.1 SR 3.10.5.2

a. ~~The reactor mode switch is OPERABLE per Surveillance Requirement 4.1.A.1 or 4.10.A.2, as applicable, and locked in the Shutdown position or in the Refuel position per Specification 3.10.A.~~ L.1

b. ~~The SRM CHANNEL(s) are OPERABLE per Specification 3.10.B.~~ A.3

c. ~~The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied.~~ A.4

d. SR 3.10.5.2 All other control rods are either fully inserted or have the surrounding four fuel assemblies removed from the core cell.

e. SR 3.10.5.1 The four fuel assemblies surrounding each control rod and/or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.

3.10 - LIMITING CONDITIONS FOR OPERATION

ACTION:

ACTION A With the requirements of the above specification not satisfied, suspend removal of control rods and/or control rod drive mechanisms from the core and/or reactor pressure vessel and initiate ACTION to satisfy the above requirements.

M.1 add proposed Required Action A.2

A.6 add proposed Required Action A.3.1

4.10 - SURVEILLANCE REQUIREMENTS

2. ~~Following replacement of all control rods and/or control rod drive mechanisms removed in accordance with this specification, perform a functional test of the "one-rod-out" Refuel position interlock, if this function had been bypassed.~~ L.3

add proposed SR 3.10.5.3 M.1

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Technical Specification (ISTS)).

A.2 CTS 3.10.J and 4.10.J.1 contain statements that require compliance with the Specification "until all control rods and control rod drive mechanisms are reinstalled and all control rods are fully inserted in the core." This statement is fundamentally true for all Specifications and does not need to be stated in each individual Specification. Requirements apply until conditions under which they are required to apply no longer exist. Therefore, deleting these statements is only an editorial preference.

A.3 The current MODE 5 requirements for SRM OPERABILITY in CTS 3.10.B and Surveillance testing in CTS 4.10.B are adequate without explicit reference to them in CTS 3.10.J.2 and 4.10.J.1.b. ITS 3.10.5 does not modify the normal SRM requirements in MODE 5, and therefore, CTS 3.10.B (ITS 3.3.1.2) must be met during this Special Operation (ITS 3.10.5). The CTS 3.10.J.2 and 4.10.J.1.b references are redundant to the current and proposed requirements, and therefore, has been deleted.

A.4 The current MODE 5 requirements for SHUTDOWN MARGIN (SDM) in CTS 3.3.A and Surveillance testing in CTS 4.3.A are adequate without explicit reference to them in CTS 3.10.J.3 and 4.10.J.1.c. ITS 3.10.5 does not modify the normal SDM requirements in MODE 5, and therefore, CTS 3.3.A (ITS 3.1.1) must be met during this Special Operation (ITS 3.10.5). The CTS 3.10.J.3 and 4.10.J.1.c references are redundant to the current and proposed requirements, and therefore, has been deleted.

A.5 The MODE 5 Applicability addition in ITS 3.10.5 ("with LCO 3.9.3, LCO 3.9.4, or LCO 3.9.5 not met") is derived from the intent of CTS 3.10.J, which says "Any number of control rods and/or control rod drive mechanisms may be removed from the core and/or reactor pressure vessel..." During the performance of these activities, ITS 3.9.3 (which requires all control rods to be fully inserted), ITS 3.9.4 (which requires each control rod full-in position indication channel for each control rod to be OPERABLE), and ITS 3.9.5 (which requires all withdrawn control rods to be OPERABLE) are not met. Therefore, this change is strictly administrative and does not modify the requirements.

ADMINISTRATIVE (continued)

A.6 An alternative Required Action (ITS 3.10.5 Required Action A.3.1) has been added to the CTS 3.10.J Action to initiate action to fully insert all control rods immediately, in lieu of meeting the requirements of the LCO. Since this new Required Action results in effectively exiting this Special Operations LCO and restores operation consistent with normal requirements for failure to meet the LCOs which were suspended by the Special Operations LCO (i.e., all control rods inserted), it is administrative (since use of the Special Operations LCOs are optional as described in proposed LCO 3.0.7).

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 A new restriction on fuel loading with control rods withdrawn has been added. ITS 3.10.5.c will only allow fuel to be loaded in an approved spiral reload sequence. ITS 3.10.5 Required Action A.2 has also been added such that, when the LCO is not met, all fuel loading must be suspended. A new SR has also been added (proposed SR 3.10.5.3) to verify, every 24 hours, fuel assemblies being loaded are in compliance with an approved spiral reload sequence. This will help ensure a reactivity excursion cannot occur with the requirements of this LCO not met. These changes represent additional restrictions on plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

None

"Specific"

L.1 The requirement in CTS 3.10.J.1 and CTS 4.10.J.1.a to "lock" the reactor mode switch in Shutdown or Refuel and the explicit requirement for the reactor mode switch to be OPERABLE is proposed to be deleted. Reactor mode switch OPERABILITY is included as part of the OPERABILITY of the required interlocks and control rod blocks. Furthermore, the position of the reactor mode switch is adequately controlled by the MODES definition Table (ITS Table 1.1-1). Reactor mode switch positions other than Refuel and Shutdown result in the unit entering some other MODE; with the associated Technical Specification compliance requirements of that MODE and of proposed LCO 3.0.1.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.2 The normal periodic (24 hour) Surveillance Frequency of CTS 4.10.J.1 (proposed SRs 3.10.5.1, 3.10.5.2, and 3.10.5.3) provides adequate assurance that the LCO requirements are satisfied. If any Surveillance has not been performed within this interval, control rod withdrawal/ removal and CRD removal may not be performed. Therefore, the CTS 4.10.J.1 requirement to perform the required Surveillances within 4 hours prior to the start of removal of a control rod or control rod drive mechanism is deleted. The normal periodic Surveillance Frequency ensures the requirements are adequately checked prior to and during control rod or control rod drive mechanism removal operations.

L.3 CTS 4.10.J.2 requires the performance of a functional test of the "one-rod-out Refuel position interlock" following replacement of all control rods and/or control rod drive mechanisms removed in accordance with CTS 3.10.J, if the function had been bypassed. Anytime the OPERABILITY of a system or component has been affected by repair, maintenance, or replacement of a component, post maintenance testing is required to demonstrate OPERABILITY of the system or component. After restoration of a component that caused a required SR to be failed, CTS 4.0.A (proposed SR 3.0.1) requires the appropriate SRs (in this case CTS 4.10.A.2; proposed SR 3.9.2.2) to be performed to demonstrate the OPERABILITY of the affected components. Therefore, the explicit post maintenance Surveillance Requirement of CTS 4.10.J.2 has been deleted from the Specifications since they are governed by plant procedures. Entry into the applicable specified condition without performing this post maintenance testing also continues to be precluded except where allowed, as discussed in the Bases for proposed SR 3.0.1.

RELOCATED SPECIFICATIONS

None

L.1 Insert New Specification 3.10.6

Insert new Specification 3.10.6, "Control Rod Testing - Operating," as shown in the Dresden 2 and 3 Improved Technical Specifications.

ADMINISTRATIVE

None

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

None

"Specific"

L.1 The proposed Special Operations Technical Specification being added allows LCO 3.1.6, "Rod Pattern Control," to be suspended to allow performance of SDM testing, control rod scram time testing, and control rod friction testing, provided the analyzed rod position sequence requirements of SR 3.3.2.1.8 are changed to require the control rod sequence to conform to the specified test sequence; or the RWM is bypassed, the requirements of LCO 3.3.2.1, Function 2 are suspended, and conformance to the approved control rod sequence for the specified test is verified by a second licensed operator or other qualified member of the technical staff. These two requirements for the Special Operation effectively limit the potential amount and rate of reactivity increase that could occur during a control rod drop accident (CRDA). This is required because during these conditions, control rod testing is sometimes required which may result in control rod patterns not in compliance with the prescribed sequences.

Special CRDA analyses are required to demonstrate that the special sequences will not result in unacceptable consequences, should a CRDA occur during the testing These analyses, performed in accordance with an NRC approved methodology, are dependent on the special test being performed. Further, the analyzed rod position sequence requirements are changed to be consistent with the analyses; or the RWM is bypassed, LCO 3.3.2.1 Function 2 is suspended, and conformance to the new rod control pattern is verified by a second authorized individual.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 (cont'd) This is a less restrictive change because this Special Operations Technical Specification provides flexibility to perform certain operations by appropriately modifying requirements of other LCOs, which are currently not allowed by the CTS.

RELOCATED SPECIFICATIONS

None

SPECIAL TEST EXCEPTIONS

3.12 - LIMITING CONDITIONS FOR OPERATION

B. SHUTDOWN MARGIN Demonstrations

LCO 3.10.7

A.2

The provisions of ~~Specifications 3.10.A and 3.10.C~~ and Table 1-2 may be suspended to permit the reactor mode switch to be in the Startup position and to allow more than one control rod to be withdrawn for SHUTDOWN MARGIN demonstration, provided that at least the following requirements are satisfied.

A.3

~~1. The source range monitors are OPERABLE per Specification 3.10.B.~~

LCO 3.10.7.b — 2. The rod worth minimizer is OPERABLE per Specification 3.3.L and is programmed for the SHUTDOWN MARGIN demonstration, or conformance with the SHUTDOWN MARGIN demonstration procedure is verified by a second licensed operator or other technically qualified individual.

A4 — add proposed LCO 3.10.7.c

LCO 3.10.7.d — 3. The "rod-out-notch-override" control shall not be used during out-of-sequence movement of the control rods.

LCO 3.10.7.e — 4. No other CORE ALTERATION(s) are in progress.

M.1 — add proposed LCO 3.10.7.f

APPLICABILITY:

OPERATIONAL MODE 5, ~~during SHUTDOWN MARGIN demonstrations.~~

A.5 — with the reactor mode switch in startup/hot standby position

ACTION:

add proposed ACTION A — A.4

Action B — With the requirements of the above specification not satisfied, immediately place the reactor mode switch in the Shutdown or Refuel position.

4.12 - SURVEILLANCE REQUIREMENTS

B. SHUTDOWN MARGIN Demonstrations

L.1

~~Within 30 minutes prior to and~~ at least ~~once per 12 hours~~ during the performance of a SHUTDOWN MARGIN demonstration, verify that:

A.3

~~1. The source range monitors are OPERABLE per Specification 3.10.B,~~

SR 3.10.7.2
SR 3.10.7.3 — 2. The rod worth minimizer is OPERABLE with the required program per Specification 3.3.L or a second licensed operator or other technically qualified individual is present and verifies compliance with the SHUTDOWN MARGIN demonstration procedures, and

SR 3.10.7.4 — 3. No other CORE ALTERATION(s) are in progress.

add proposed SR 3.10.7.2 and SR 3.10.7.3 Notes — A.6

add proposed SR 3.10.7.5 — A.4

add proposed SR 3.10.7.6 — M.1

3.3 - LIMITING CONDITIONS FOR OPERATION

4.3 - SURVEILLANCE REQUIREMENTS

1) If the control rod associated with any inoperable scram accumulator is withdrawn, immediately verify that at least one control rod drive pump is operating by inserting at least one withdrawn control rod at least one notch. With no control rod drive pump operating, immediately place the reactor mode switch in the Shutdown position.

2) Fully insert the inoperable control rods and disarm the associated directional control valves[b] either:

a) Electrically, or

b) Hydraulically by closing the drive water and exhaust water isolation valves.

d. With the provisions of ACTION 1.c.2 above not met, be in at least HOT SHUTDOWN within 12 hours.

See ITS 3.1.5

A.7

M.1

2. In OPERATIONAL MODE 5[a]:

a. With one withdrawn control rod with its associated scram accumulator inoperable, fully insert the affected control rod and disarm the associated directional control valves[b] within one hour, either:

---

a In OPERATIONAL MODE 5, this Specification is applicable for the accumulators associated with each withdrawn control rod and is not applicable to control rods removed per Specification 3.10.I or 3.10.J.

b May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod to OPERABLE status.

A.1

3.3 - LIMITING CONDITIONS FOR OPERATION

4.3 - SURVEILLANCE REQUIREMENTS

1) Electrically, or

2) Hydraulically by closing the drive water and exhaust water isolation valves.

See ITS 3.1.5

A.7

b. ~~With more than one withdrawn control rod with the associated scram accumulator inoperable~~ or no control rod drive pump operating, immediately place the reactor mode switch in the Shutdown position.

LCO 3.10.7.f and ACTION B

M.1

A.1

3.1 - LIMITING CONDITIONS FOR OPERATION

A. Reactor Protection System (RPS)

LCO 3.10.7.a

A.8 The reactor protection system (RPS) instrumentation CHANNEL(s) shown in Table 3.1.A-1 shall be OPERABLE.

APPLICABILITY:

As shown in Table 3.1.A-1.

ACTION:

ACTION B

1. With the number of OPERABLE CHANNEL(s) less than required by the Minimum CHANNEL(s) per TRIP SYSTEM requirement for one TRIP SYSTEM, place the inoperable CHANNEL(s) and/or that TRIP SYSTEM in the tripped condition[a] within 1 hour.

A.10

M.2

2. With the number of OPERABLE CHANNEL(s) less than required by the Minimum CHANNEL(s) per TRIP SYSTEM requirement for both TRIP SYSTEM(s), place at least one TRIP SYSTEM in the tripped condition[b] within 1 hour and take the ACTION required by Table 3.1.A-1.

4.1 - SURVEILLANCE REQUIREMENTS

A. Reactor Protection System

SR 3.10.7.1

1. Each reactor protection system instrumentation CHANNEL shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL MODE(s) and at the frequencies shown in Table 4.1.A-1. A.8

2. LOGIC SYSTEM FUNCTIONAL TEST(s) of all CHANNEL(s) shall be performed at least once per 18 months.

3. The response time of each reactor trip functional unit shown in Table 3.1.A-1 shall be demonstrated at least once per 18 months. Each test shall include at least one CHANNEL per TRIP SYSTEM such that all CHANNEL(s) are tested at least once every N times 18 months where N is the total number of redundant CHANNEL(s) in a specific reactor TRIP SYSTEM.

See ITS 3.3.1.1

a An inoperable CHANNEL need not be placed in the tripped condition when this would cause the trip function to occur. In these cases, the inoperable CHANNEL shall be restored to OPERABLE status within 2 hours or the ACTION required by Table 3.1.A-1 for that trip function shall be taken.

b The TRIP SYSTEM need not be placed in the tripped condition if this would cause the trip function to occur. When a TRIP SYSTEM can be placed in the tripped condition without causing the trip function to occur, place the TRIP SYSTEM with the most inoperable CHANNEL(s) in the tripped condition; if both systems have the same number of inoperable CHANNEL(s), place either TRIP SYSTEM in the tripped condition.

A.1

ITS 3.10.7

REACTOR PROTECTION SYSTEM

TABLE 3.1.A-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION

Functional Unit	Applicable OPERATIONAL MODE(s)	Minimum OPERABLE CHANNEL(s) per TRIP SYSTEM[a]	ACTION
1. Intermediate Range Monitor:			
a. Neutron Flux - High	2 3, 4 5	3 2 3	11 12 13
b. Inoperative	2 3, 4 5	3 2 3	11 12 13
2. Average Power Range Monitor[e]:			
A.8 (LCO 3.10.7.a) a. Setdown Neutron Flux - High	2 3 5[b]	2 2 2	11 12 13
(LCO 3.10.7.a) b. Flow Biased Neutron Flux - High	1	2	14
c. Fixed Neutron Flux - High	1	2	14
d. Inoperative	1, 2 3 5[b]	2 2 2	11 12 13
3. Reactor Vessel Steam Dome Pressure - High	1, 2[f]	2	11
4. Reactor Vessel Water Level - Low	1, 2	2	11

A.9

<See ITS 3.3.1.1>

TABLE 3.1.A-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

TABLE NOTATION

(a) A CHANNEL may be placed in an inoperable status for up to 2 hours for required surveillance without placing the TRIP SYSTEM in the tripped condition provided at least one OPERABLE CHANNEL in the same TRIP SYSTEM is monitoring that parameter.

(b) This function may be bypassed, provided a control rod block is actuated, for reactor protection system logic reset in Refuel and Shutdown positions of the reactor mode switch.

(c) Deleted

(d) With THERMAL POWER greater than or equal to 45% of RATED THERMAL POWER.

(e) An APRM CHANNEL is inoperable if there are fewer than 2 LPRM inputs per level or there are less than 50% of the normal complement of LPRM inputs to an APRM CHANNEL.

(f) This function is not required to be OPERABLE when the reactor pressure vessel head is unbolted or removed per Specification 3.12.A.

LCO 3.10.7.a (g) Required to be OPERABLE only prior to and during required SHUTDOWN MARGIN demonstrations performed per Specification 3.12.B. A.8

(h) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.

(i) With any control rod withdrawn. Not applicable to control rods removed per Specification 3.10.I or 3.10.J.

(j) This function is not required to be OPERABLE when reactor pressure is less than 600 psig.

See ITS 3.3.1.1

A.1

ITS 3.10.7

TABLE 4.1.A-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Functional Unit	Applicable OPERATIONAL MODES	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION(a)
1. Intermediate Range Monitor:				
a. Neutron Flux - High	2 3, 4, 5	S(b) S	S/U(c), W(a) W(a)	E(a) E(a)
b. Inoperative	2, 3, 4, 5	NA	W(a)	NA
2. Average Power Range Monitor(f):				
a. Setdown Neutron Flux - High	2, 3, 5(m)	S(b) S	S/U(c), W(a) W(m)	SA(a) SA(m)
b. Flow Biased Neutron Flux - High	1	S, D	W	W(d,e), SA
c. Fixed Neutron Flux - High	1	S	W	W(d), SA
d. Inoperative	1, 2, 3, 5(m)	NA	W	NA
3. Reactor Vessel Steam Dome Pressure - High	1, 2(l)	NA	M	Q
4. Reactor Vessel Water Level - Low	1, 2	D	M	E(h)
5. Main Steam Line Isolation Valve - Closure	1, 2(o)	NA	M	E
6. Deleted				
7. Drywell Pressure - High	1, 2(n)	NA	M	Q

LCO 3.10.7.a

SR 3.10.7.1

A.8

SR 3.10.7.1

LCO 3.10.7.a

A.9

See ITS 3.3.1.1

A.1

TABLE 4.1.A-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

(l) With THERMAL POWER greater than or equal to 45% of RATED THERMAL POWER.

LCO 3.10.7.a A.8 (m) Required to be OPERABLE only prior to and during required SHUTDOWN MARGIN demonstrations performed per Specification 3.12.B.

(n) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.

(o) The provisions of Specification 4.0.D are not applicable to the CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION surveillances for a period of 24 hours after entering OPERATIONAL MODE 2 or 3 when shutting down from OPERATIONAL MODE 1.

(p) This function is not required to be OPERABLE when reactor pressure is less than 600 psig.

(q) Delete

<See ITS 3.3.1.1>

ADMINISTRATIVE

A.1 In the conversion of the Dresden 2 and 3 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Technical Specification (ISTS)).

A.2 The exceptions in CTS 3.12.B to CTS 3.10.A (ITS 3.9.1 and ITS 3.9.2) and CTS 3.10.C (ITS 3.9.3) are not required. The exception to CTS 3.10.A is not needed since in the ITS the corresponding Specification no longer requires the reactor mode switch to be locked in Refuel at all times while in MODE 5. The reactor mode switch is required to be locked when it is in the Refuel position. (Refer to Discussion of Changes for ITS: 3.9.2 for a technical description of the change.) The exception to CTS 3.10.C cannot be used, since CTS 3.12.B (ITS 3.10.7) precludes all other CORE ALTERATIONS from taking place; thus, the exception to loading fuel with all rods inserted (CTS 3.10.C; ITS 3.9.3) cannot be used. Therefore, deletion of these two exceptions is administrative.

A.3 The current MODE 5 requirements in CTS 3.12.B.1 and 4.12.B.1 for SRM OPERABILITY and Surveillance testing are adequate without explicit reference to them. ITS 3.10.7 does not modify the normal requirements; therefore, CTS 3.10.B (ITS 3.3.1.2) must also be met during this Special Operation. This reference is redundant to the current and proposed requirements, and therefore, has been deleted.

A.4 The current requirements for control rod coupling in MODE 5 (CTS 3.3.H) are proposed to be delineated as specific restrictions for SDM in MODE 5 (ITS LCO 3.10.7.c), since they are deleted as normal MODE 5 requirements. This change includes an appropriate ACTION (ITS 3.10.7 ACTION A) and Surveillance (proposed SR 3.10.7.5), consistent with those described in ITS 3.1.3, which governs the MODES 1 and 2 control rod coupling requirements.

A.5 The Applicability of CTS 3.12.B has been revised to clarify actual applicable conditions for ITS 3.10.7. The MODE 5 Applicability addition in ITS 3.10.7 (with reactor mode switch in startup/hot standby position) is derived from the intent of CTS 3.12.B, which says "The provisions of...Table 1-2 may be suspended to permit the reactor mode switch to be in the Startup position..." Therefore, this change is considered administrative.

ADMINISTRATIVE (continued)

A.6 Two new Notes have been added in ITS 3.10.7 for clarity. Proposed SR 3.10.7.2 Note has been added to CTS 4.12.B.2 clarifying that if proposed SR 3.10.7.3 is satisfied for ITS LCO 3.10.7.b.1 requirements, then proposed SR 3.10.7.2 is not required to be met and proposed SR 3.10.7.3 Note has been added to CTS 4.12.B.2 clarifying that if proposed SR 3.10.7.2 is satisfied for ITS LCO 3.10.7.b.2 requirements, then SR 3.10.7.3 is not required to be met. This is allowed since ITS LCO 3.10.7.b.1, which is verified by proposed SR 3.10.7.2, is one option and ITS LCO 3.10.7.b.2, which is verified by proposed SR 3.10.7.3, is the other option. Since these Notes have been added for clarity, they are considered administrative changes.

A.7 CTS 3.3.G Action 2.b provides actions if multiple control rod scram accumulators are inoperable in MODE 5. The multiple, inoperable withdrawn control rod accumulator requirement is already covered by ITS 3.9.5, since ITS 3.9.5 requires each withdrawn control rod to have an OPERABLE accumulator. ITS 3.9.5 is applicable in MODE 5, which is the MODE the unit is in when ITS 3.10.7 is being used. ITS 3.10.7 does not exempt ITS 3.9.5. Therefore, this specific requirement is not included in ITS 3.10.7 and this change is considered administrative.

A.8 CTS Table 3.1.A-1 footnote (g) and CTS Table 4.1.A-1 footnote (m) require CTS Tables 3.1.A-1 and 4.1.A-1, respectively, Function 2.a, the APRM Setdown Neutron Flux - High, Function, and Function 2.d, the APRM Inoperable Function to be Operable in MODE 5 only during shutdown margin demonstrations performed per CTS 3.12.B. This requirement is included in the ITS as the ITS LCO 3.10.7.a requirement. The CTS 3.1.A LCO and Applicability, as they relate to the two Functions are also included in ITS LCO 3.10.7.a. CTS 4.1.A.1 requires Channel Checks, Channel Functional Tests, and Channel Calibrations on the two Functions at the Frequencies listed in CTS Table 4.1.A-1. CTS 4.1.A.2 requires a Logic System Functional Test on the two Functions every 18 months. The ITS contains a single Surveillance, proposed SR 3.10.7.1, which requires performance of the MODE 2 applicable SRs for ITS 3.3.1.1, Functions 2.a and 2.d. This proposed SR requires these current Surveillances to be performed, therefore it is equivalent to CTS 4.1.A.1 and 4.1.A.2 (any changes to these CTS requirements are addressed in the Discussion of Changes for ITS: 3.3.1.1, in Section 3.3). Since this change is not modifying the current requirements, it is considered administrative.

A.9 CTS Tables 3.1.A-1 (including footnote (g)) and 4.1.A-1 (including footnote (m)) lists requirements for the APRM Functions in MODE 5, and are applicable only during Shutdown Margin demonstrations performed per CTS 3.12.B. ITS 3.10.7 requires the same Functions to be Operable during

ADMINISTRATIVE

A.9 (cont'd) shutdown margin demonstrations, but applies the MODE 2 requirements specified in ITS 3.3.1.1, RPS Instrumentation. The proposed requirements, including the Actions and Surveillance Requirements, are equivalent to the current MODE 5 requirements, therefore this change is considered administrative.

A.10 These changes to CTS 3/4.1.A are provided in the Dresden ITS consistent with the Technical Specifications Change Request submitted to the NRC for approval per ComEd letter JMHLTR 00-0002, dated January 11, 2000. The changes identified are consistent with the allowances in NEDO-30851-P-A, "Technical Specification Improvement Analysis for BWR Protection System," dated March 1988. As such, this change is administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 A requirement has been added (ITS LCO 3.10.7.f) to ensure adequate CRD charging water pressure is available. This will ensure scram pressure is available, if needed. An appropriate Surveillance Requirement (proposed SR 3.10.7.6) has also been added. While CTS 3.3.G, Action 2.b, has a requirement to place the reactor mode switch in Shutdown if the control rod drive pump is not operating, this new requirement is more restrictive on plant operations since a specific drive water pressure is now required.

M.2 CTS 3.1.A Actions 1 and 2 provide the appropriate actions if an APRM Setdown Neutron Flux - High or Inoperable channel is inoperable during Mode 5 when an SDM test is being performed. CTS 3.1.A Action 1 allows the test to continue with an inoperable channel, provided the inoperable channel or the associated trip system is tripped within 1 hour. When more than one channel is inoperable, CTS 3.1.A Action 2 continues to allow time to restore or trip the channel prior to requiring the SDM test to be suspended. ITS 3.10.7 ACTION B will require the SDM test to be immediately suspended by placing the reactor mode switch in shutdown or refueling. This will ensure that a SDM test is not performed without adequate neutron flux monitoring and automatic scram capability, accounting for single failure of a channel. Therefore, this change is more restrictive on plant operations.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

None

"Specific"

L.1 The Surveillance Frequency of CTS 4.12.B has been modified to require the RWM verification to be performed in accordance with the applicable Surveillance requirements of the RWM Specification, and the CORE ALTERATION verification every 12 hours, instead of once within 30 minutes prior to the start of the SDM test. For the RWM Surveillance, this 30 minute Frequency was effectively a "paper-check", in that the Surveillances required by CTS 3.3.L were verified current, but not actually required to be performed within 30 minutes prior to the SDM test. Proposed SR 3.10.7.2 deletes this 30 minute paper check, but maintains the requirement to have performed the tests within the required Frequency. This paper check is administrative and is generally governed by plant procedures.

The Surveillance required if the RWM is inoperable has been changed from verifying a second licensed operator or other technically qualified individual is present within 30 minutes of the start of the SDM test to actually requiring the rod movement to be verified correct every time a rod is moved. The normal periodic Surveillance Frequencies ensure the requirements are adequately checked prior to and during SDM testing. For the Core Alteration Surveillance, the normal periodic (12 hour) Surveillance Frequency of CTS 4.12.B (proposed SR 3.10.7.4) provides adequate assurance that the LCO requirements are satisfied. If the Core Alteration verification has not been performed within this interval, then the SDM test may not be commenced. Therefore, the CTS 4.12.B requirement to perform the Core Alteration verification within 30 minutes prior to the start of the SDM test is deleted. The normal periodic Surveillance Frequency ensures the requirements are adequately checked prior to and during a SDM test.

RELOCATED SPECIFICATIONS

None

M.1

3.12 - LIMITING CONDITIONS FOR OPERATION

A. PRIMARY CONTAINMENT INTEGRITY

The provisions of Specifications 3.7.A, 3.7.E and 3.10.A and Table 1-2 may be suspended to permit the reactor pressure vessel closure head and the drywell head to be removed and the primary containment air lock doors to be open when the reactor mode switch is in the Startup position during low power PHYSICS TESTS with THERMAL POWER less than 1% of RATED THERMAL POWER and reactor coolant temperature less than 212°F.

APPLICABILITY:

OPERATIONAL MODE 2, during low power PHYSICS TESTS.

ACTION:

With THERMAL POWER greater than or equal to 1% of RATED THERMAL POWER or with the reactor coolant temperature greater than or equal to 212°F, immediately place the reactor mode switch in the Shutdown position.

4.12 - SURVEILLANCE REQUIREMENTS

A. PRIMARY CONTAINMENT INTEGRITY

The THERMAL POWER and reactor coolant temperature shall be verified to be within the limits at least once per hour during low power PHYSICS TESTS.

ADMINISTRATIVE

None

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3/4.12.A has been deleted. This exception to the requirement for maintaining Primary Containment Integrity is no longer needed at Dresden 2 and 3 since all low power PHYSICS TESTS performed in MODE 2 and requiring primary containment integrity requirements to be suspended have been completed. This change represents an additional restriction on plant operations through the deletion of an allowed exception to the Limiting Conditions for Operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

None

RELOCATED SPECIFICATIONS

None

A.1

3.12 - LIMITING CONDITIONS FOR OPERATION

C. Inservice Leak and Hydrostatic Testing Operation

The average reactor coolant temperature specified in Table 1-2 for OPERATIONAL MODE 4 may be changed to "NA," and operation considered not to be in OPERATIONAL MODE 3; and the requirements of LCO 3.6.P, "Shutdown Cooling - COLD SHUTDOWN," may be suspended, to allow performance of an inservice leak or hydrostatic test provided the following OPERATIONAL MODE 3 LCOs are met:

1. LCO 3.2.A, "Isolation Actuation", Table 3.2.A-1, Functional Unit Number 2, "SECONDARY CONTAINMENT ISOLATION";
2. LCO 3.7.N, "SECONDARY CONTAINMENT INTEGRITY";
3. LCO 3.7.O, "Secondary Containment Automatic Isolation Dampers"; and
4. LCO 3.7.P, "Standby Gas Treatment System."

APPLICABILITY:

OPERATIONAL MODE 4 with average reactor coolant temperature >212°F.

ACTION:

With one or more of the above requirements[a] not met:

a Separate ACTION entry is allowed for each requirement of the LCO.

4.12 - SURVEILLANCE REQUIREMENTS

C. Inservice Leak and Hydrostatic Testing Operation

Perform the applicable surveillance requirements for the required OPERATIONAL MODE 3 LCOs in accordance with the frequency of the applicable surveillance requirements.

3.12 - LIMITING CONDITIONS FOR OPERATION

4.12 - SURVEILLANCE REQUIREMENTS

1. Immediately enter the applicable ACTION of the affected LCO[(b)], or

2. Immediately suspend activities that could increase the average reactor coolant temperature or pressure, and reduce average reactor coolant temperature to ≤212°F within 24 hours.

A.1

b Required ACTIONs to be in OPERATIONAL MODE 4 include reduce average coolant temperature ≤212°F.

DISCUSSION OF CHANGES
CTS: 3/4.12.C - INSERVICE LEAK AND HYDROSTATIC TESTING OPERATION

ADMINISTRATIVE

A.1 CTS 3/4.12.C has been deleted from the Dresden 2 and 3 ITS consistent with the Technical Specifications Change Request submitted to the NRC for approval per ComEd letter PSLTR-00-0057, dated February 18, 2000. The changes identified revise the heatup, cooldown, and inservice test limitations for the reactor pressure vessel of each unit to a maximum of 32 Effective Full Power Years. This proposed change relies on recently approved American Society of Mechanical Engineers methodology for determining allowable pressure and temperature limits. Based on the methodology and associated results, this special operations Specification is not required. A similar Technical Specifications amendment was recently issued for Duke Energy, Oconee Nuclear Station. As such, this change is administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE

None

RELOCATED SPECIFICATIONS

None

DISCUSSION OF CHANGES
ITS: SECTION 3.10 - SPECIAL OPERATIONS BASES

The Bases of the current Technical Specifications for this section (page B 3/4.12-1 through B 3/4.12-3) have been completely replaced by the revised Bases that reflect the format and applicable content of the Dresden 2 and 3 ITS Section 3.10, consistent with the BWR ISTS, NUREG-1433, Rev. 1. The revised Bases are as shown in the Dresden 2 and 3 ITS Bases. In addition, pages 3/4.12-3 and 3/4.12-4, blank pages, have been removed.

3.10 SPECIAL OPERATIONS

3.10.1 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.1

The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown," may be suspended, to allow performance of an inservice leak or hydrostatic test provided the following MODE 3 LCOs are met:

a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions [1, 3, 4 and 5] of Table 3.3.6.2-1;

b. LCO 3.6.4.1, "Secondary Containment";

c. LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)"; and

d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature > [200]°F.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more of the above requirements not met.	A.1	--------NOTE-------- Required Actions to be in MODE 4 include reducing average reactor coolant temperature to ≤ [200]°F. -------------------------	
		Enter the applicable Condition of the affected LCO.	Immediately
	<u>OR</u>		
	A.2.1	Suspend activities that could increase the average reactor coolant temperature or pressure.	Immediately
	<u>AND</u>		
	A.2.2	Reduce average reactor coolant temperature to ≤ [200]°F.	24 hours

1

SURVEILLANCE REQUIREMENTS

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

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ISTS: 3.10.1 - INSERVICE LEAK AND HYDROSTATIC TESTING OPERATION

1. The allowance provided by this Specification has been deleted since it is not needed at Dresden 2 and 3. Inservice leak and hydrostatic testing can be performed in MODE 4 such that the special testing provisions associated with MODE 3 as provided by this Specification are not required. This change is consistent with the Technical Specifications Change Request submitted to the NRC for approval per ComEd letter PSLTR-00-0057, dated February 23, 2000.

3.10 SPECIAL OPERATIONS

3.10.2 Reactor Mode Switch Interlock Testing 1 1

<3.10.A Footnote (d)> <T1-2 Footnote (a)> <DOC L.1>

LCO 3.10.2 The reactor mode switch position specified in Table 1.1-1 for MODES 3, 4, and 5 may be changed to include the run, startup/hot standby, and refuel position, and operation considered not to be in MODE 1 or 2, to allow testing of instrumentation associated with the reactor mode switch interlock functions, provided:

a. All control rods remain fully inserted in core cells containing one or more fuel assemblies; and

b. No CORE ALTERATIONS are in progress.

APPLICABILITY: <3.10.A Footnote (d)> <T1-2 Footnote (a)>
MODES 3 and 4 with the reactor mode switch in the run, startup/hot standby, or refuel position,
MODE 5 with the reactor mode switch in the run or startup/hot standby position.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
<DOC M.1> A. One or more of the above requirements not met.	A.1	Suspend CORE ALTERATIONS except for control rod insertion.	Immediately
	<u>AND</u>		
	A.2	Fully insert all insertable control rods in core cells containing one or more fuel assemblies.	1 hour
	<u>AND</u>		
			(continued)

<CTS>

ACTIONS

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

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
1 1 <DOC M.1>	SR 3.10.2.1	Verify all control rods are fully inserted in core cells containing one or more fuel assemblies.	12 hours
<DOC M.1>	SR 3.10.2.2	Verify no CORE ALTERATIONS are in progress.	24 hours

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.10.1 - REACTOR MODE SWITCH INTERLOCK TESTING

1. ISTS 3.10.2 is renumbered as ITS 3.10.1 as a result of the deletion of ISTS 3.10.1, "Inservice Leak and Hydrostatic Testing Operation."

3 2 3.10 SPECIAL OPERATIONS

3.10.~~3~~ Single Control Rod Withdrawal—Hot Shutdown

LCO 3.10.~~3~~

<T1-2 Footnote (e)>
<Doc M.1>
<3.10.A>

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 ~~2~~1.a, 1.b, 7.a, 7.b, ~~10, and 11~~ 11, and 12 of Table 3.3.1.1-1, ~~and~~ 1 2

LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," MODE 5 requirements, 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.

<T1-2 Footnote (e)> APPLICABILITY: MODE 3 with the reactor mode switch in the refuel position.

<Appl 3.10.A>
<3.10.A Footnote (a)>

<CTS>

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
<DOC M.1> <3.10.A Act 2> A. One or more of the above requirements not met.	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

<CTS>

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
<DOC A.3> 2	SR 3.10.~~3~~.1	Perform the applicable SRs for the required LCOs.	According to the applicable SRs
<DOC M.1>	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
<DOC M.1>	SR 3.10.~~3~~.3	Verify all control rods, other than the control rod being withdrawn, are fully inserted.	24 hours

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.10.2 - SINGLE CONTROL ROD WITHDRAWAL — HOT SHUTDOWN

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. The ITS 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," Applicability requirements for control rod withdrawal have been revised to not include MODE 3 consistent with the applicability of RPS Functions in CTS 3.1.1. In MODE 3, a control rod may be withdrawn from a core cell containing one or more fuel assemblies in accordance with LCO 3.10.2, "Single Control Rod Withdrawal — Hot Shutdown." Therefore, LCO 3.10.2 includes OPERABILITY requirements for RPS Functions (ITS 3.3.1.1) and control rods (ITS 3.9.5). As a result, LCO 3.10.2 has been modified to also include requirements for the RPS Electric Power Monitoring assemblies to be OPERABLE when the RPS Functions and control rods are required to be OPERABLE.

3. ISTS 3.10.3 is renumbered as ITS 3.10.2 as a result of the deletion of ISTS 3.10.1, "Inservice Leak and Hydrostatic Testing Operation."

<CTS>

[3] 3

3.10 SPECIAL OPERATIONS

3.10.~~8~~ Single Control Rod Withdrawal—Cold Shutdown

<3.10.I>
<T1-2 Footnotes (b) and (e)>
<DOC M.2>
<DOC L.2>
<3.10.A>

LCO 3.10.~~8~~ 3 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,"

<u>OR</u>

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~~ 11, and 12 [1] of Table 3.3.1.1-1, ~~and~~ [2]

LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," MODE 5 requirements, and

LCO 3.9.5, "Control Rod OPERABILITY—Refueling,"

<u>OR</u>

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.

<Appl 3.10.I>
<T1-2 Footnote (b)>
<Appl 3.10.A>
<3.10.A Footnote (a)>

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

<CTS>

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
<3.10.I Act> <DOC M.1> <3.10.A Act> 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
	OR		
	A.2.1	Initiate action to fully insert all insertable control rods.	Immediately
	AND		
	A.2.2	Place the reactor mode switch in the shutdown position.	1 hour

(continued)

<CTS>

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.10.I Act> <Doc M.1>	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
		AND	
		B.2.1 Initiate action to fully insert all control rods.	Immediately
		OR	
		B.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

3 3

	SURVEILLANCE		FREQUENCY
<4.10.I.1> <4.10.I.3> <Doc L.2> <Doc A.8>	SR 3.10.4.1	Perform the applicable SRs for the required LCOs.	According to the applicable SRs
<4.10.I.4>	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)

<CTS>

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY
[3] 3 <4.10.I.4.a> <4.10.I.5>	SR 3.10.4.3	Verify all control rods, other than the control rod being withdrawn, are fully inserted.	24 hours
<DOC L.2>	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

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. The MODE 4 Applicability of LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," as it relates to control rod withdrawal has been revised to not include MODE 4, consistent with the applicability of RPS Functions in CTS 3.3.1.1. In MODE 4, a control rod may be withdrawn from a core cell containing one or more fuel assemblies in accordance with LCO 3.10.3, "Single Control Rod Withdrawal — Cold Shutdown." Therefore, LCO 3.10.3 includes OPERABILITY requirements for RPS Functions (ITS 3.3.1.1) and control rods (ITS 3.9.5). As a result, LCO 3.10.3 has been modified to also include requirements for the RPS Electric Power Monitoring assemblies to be OPERABLE when the RPS Functions and control rods are required to be OPERABLE.

3. ISTS 3.10.4 is renumbered as ITS 3.10.3 as a result of the deletion of ISTS 3.10.1, "Inservice Leak and Hydrostatic Testing Operation."

<CTS>

2 4 3.10 SPECIAL OPERATIONS

3.10.8 Single Control Rod Drive (CRD) Removal—Refueling

<3.10.I>
{DOC M.1}

LCO 3.10.8 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:

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.

<Appl 3.10.I> APPLICABILITY: MODE 5 with LCO 3.9.5 not met.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.10.I Act> A. One or more of the above requirements not met.	A.1 Suspend removal of the CRD mechanism. AND	Immediately (continued)

<CTS>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.10.I Act> <Doc A.7> A. (continued)	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

2 — 4

	SURVEILLANCE		FREQUENCY
<4.10.I.4.a> <4.10.I.5>	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
<4.10.I.4>	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
<Doc M.1>	SR 3.10.5.3	Verify a control rod withdrawal block is inserted.	24 hours
<4.10.I.3>	SR 3.10.5.4	Perform SR 3.1.1.1.	According to SR 3.1.1.1

(continued)

<CTS>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
1 <DOC M.1> 2 4 SR 3.10.~~5~~.5 Verify no other CORE ALTERATIONS are in progress.	24 hours

1. Typographical/grammatical error corrected.

2. ISTS 3.10.5 is renumbered as ITS 3.10.4 as a result of the deletion of ISTS 3.10.1, "Inservice Leak and Hydrostatic Testing Operation."

<CTS>

3.10 SPECIAL OPERATIONS

3.10.8 Multiple Control Rod Withdrawal—Refueling

<3.10.J>
<DOC M.1>

LCO 3.10.8 The requirements of LCO 3.9.3, "Control Rod Position"; LCO 3.9.4, "Control Rod Position Indication"; and LCO 3.9.5, "Control Rod OPERABILITY—Refueling," may be suspended, and the "full in" position indicators may be bypassed for any number of control rods in MODE 5, to allow withdrawal of these control rods, removal of associated control rod drives (CRDs), or both, provided the following requirements are met:

a. The four fuel assemblies are removed from the core cells associated with each control rod or CRD to be removed;

b. All other control rods in core cells containing one or more fuel assemblies are fully inserted; and

c. Fuel assemblies shall only be loaded in compliance with an approved [spiral] reload sequence.

<Appl 3.10.J> APPLICABILITY: MODE 5 with LCO 3.9.3, LCO 3.9.4, or LCO 3.9.5 not met.

ACTIONS

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

<3.10.J Act>
<DOC M.1>

<CTS>

ACTIONS

	CONDITION	REQUIRED ACTION		COMPLETION TIME
<3.10.J Act> <DOC A.6>	A. (continued)	A.3.1	Initiate action to fully insert all control rods in core cells containing one or more fuel assemblies.	Immediately
		<u>OR</u>		
		A.3.2	Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

3 — 5

	SURVEILLANCE		FREQUENCY
<4.10.J.1.e>	SR 3.10.6.1	Verify the four fuel assemblies are removed from core cells associated with each control rod or CRD removed.	24 hours
<4.10.J.1.d>	SR 3.10.6.2	Verify all other control rods in core cells containing one or more fuel assemblies are fully inserted.	24 hours
<DOC M.1>	SR 3.10.6.3	-------------------NOTE------------------- Only required to be met during fuel loading. -- 2 Verify fuel assemblies being loaded are in compliance with an approved [spiral] reload sequence.	24 hours

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.10.5 - MULTIPLE CONTROL ROD WITHDRAWAL — REFUELING

1. Typographical/grammatical error corrected.

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. ISTS 3.10.6 is renumbered as ITS 3.10.5 as a result of the deletion of ISTS 3.10.1, "Inservice Leak and Hydrostatic Testing Operation."

<CTS>

3.10 SPECIAL OPERATIONS

3 6

3.10.7 Control Rod Testing—Operating

<DOC L.1> LCO 3.10.7 The requirements of LCO 3.1.6, "Rod Pattern Control," may be suspended to allow performance of SDM demonstrations, control rod scram time testing, control rod friction testing, ~~and the Startup Test Program,~~ provided: 1

2 analyzed rod

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

<u>OR</u>

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

<DOC L.1> APPLICABILITY: MODES 1 and 2 with LCO 3.1.6 not met.

ACTIONS

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

<CTS>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
3 6 <DOC L.1> SR 3.10.~~7~~.1	---NOTE--- Not required to be met if SR 3.10.~~7~~.2 satisfied. ------ Verify movement of control rods is in compliance with the approved control rod sequence for the specified test by a second licensed operator or other qualified member of the technical staff.	During control rod movement
3 6 <DOC L.1> SR 3.10.~~7~~.2	---NOTE--- Not required to be met if SR 3.10.~~7~~.1 satisfied. ------ Verify control rod sequence input to the RWM is in conformance with the approved control rod sequence for the specified test.	Prior to control rod movement

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.10.6 - CONTROL ROD TESTING — OPERATING

1. The Startup Test Program has been completed at Dresden 2 and 3; therefore, a reference is not needed.

2. Control rod drop accident (CRDA) initial conditions, for Dresden, are developed using NRC approved ComEd methodologies. The resulting sequence is referred to as the "analyzed rod position sequence." Therefore, the Specification has been modified to reflect the site-specific allowance. ITS 3.1.6 has also been modified to reflect this approved sequence.

3. ISTS 3.10.7 is renumbered as ITS 3.10.6 as a result of the deletion of ISTS 3.10.1, "Inservice Leak and Hydrostatic Testing Operation."

<CTS>

3.10 SPECIAL OPERATIONS

5 7

3.10.8 SHUTDOWN MARGIN (SDM) Test—Refueling

<3.12.B>
<DOC A.4>
<DOC M.1>
<3.3.6 Act 2.b>
<T3.1.A-1 2.a>
<T3.1.A-1 2.d>
<T3.1.A-1 Footnote (g)>

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

a. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," MODE 2 requirements for Functions 2.a and 2.e d of Table 3.3.1.1-1; 1 2

b. 1. LCO 3.3.2.1, "Control Rod Block Instrumentation," MODE 2 requirements for Function 2 of Table 3.3.2.1-1, with the banked analyzed rod position withdrawal sequence requirements of SR 3.3.2.1.8 changed to require the control rod sequence to conform to the SDM test sequence, 4

<T4.1.A-1 2.a>
<T4.1.A-1 2.d>
<T4.1.A-1 Footnote (m)>

OR

2. Conformance to the approved control rod sequence for the SDM test is verified by a second licensed operator or other qualified member of the technical staff;

c. Each withdrawn control rod shall be coupled to the associated CRD;

d. All control rod withdrawals [during out of sequence control rod moves] shall be made in the single notch out withdrawal mode;

e. No other CORE ALTERATIONS are in progress; and

f. CRD charging water header pressure ≥ [940] psig. 3

<Appl 3.12.B>
<Appl 3.1.A>

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

<CTS>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<DOC A.4> A. ----------NOTE--------- Separate Condition entry is allowed for each control rod. --------------------- One or more control rods not coupled to its associated CRD.	-------------NOTE------------- Rod worth minimizer may be bypassed as allowed by LCO 3.3.2.1, "Control Rod Block Instrumentation," if required, to allow insertion of inoperable control rod and continued operation. ------------------------------	
	A.1 Fully insert inoperable control rod.	3 hours
	AND	
	A.2 Disarm the associated CRD.	4 hours
<3.12.B Act> <3.3.6 Act 2.b> B. One or more of the above requirements not met for reasons other than Condition A.	B.1 Place the reactor mode switch in the shutdown or refuel position.	Immediately
~~C. One control rod not coupled to its associated CRD.~~	~~C.1 Declare the affected control rod inoperable.~~	~~Immediately~~ TSTF-221

<CTS>

SURVEILLANCE REQUIREMENTS

5 7

		SURVEILLANCE	FREQUENCY
<4.1.A> <4.1.A-1 2.a> <4.1.A-1 2.d>	SR 3.10.8.1	Perform the MODE 2 applicable SRs for LCO 3.3.1.1, Functions 2.a and 2.d of Table 3.3.1.1-1.	According to the applicable SRs
<4.12.B.2> <DOC A.6>	SR 3.10.8.2	-------------------NOTE------------------- Not required to be met if SR 3.10.8.3 satisfied. -- Perform the MODE 2 applicable SRs for LCO 3.3.2.1, Function 2 of Table 3.3.2.1-1.	According to the applicable SRs
<4.12.B.2> <DOC A.6>	SR 3.10.8.3	-------------------NOTE------------------- Not required to be met if SR 3.10.8.2 satisfied. -- Verify movement of control rods is in compliance with the approved control rod sequence for the SDM test by a second licensed operator or other qualified member of the technical staff.	During control rod movement
<4.12.B.3>	SR 3.10.8.4	Verify no other CORE ALTERATIONS are in progress.	12 hours

(continued)

<CTS>

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
5 7 <DOC A.4> SR 3.10.8.5	Verify each withdrawn control rod does not go to the withdrawn overtravel position.	Each time the control rod is withdrawn to "full out" position AND Prior to satisfying LCO 3.10.8.c requirement after work on control rod or CRD System that could affect coupling 7 5
<DOC M.1> SR 3.10.8.6	3 [Verify CRD charging water header pressure ≥ [940] psig.	7 days

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS: 3.10.7 - SDM TEST — REFUELING

1. Typographical/grammatical error corrected.

2. The proper RPS Function number has been provided.

3. The brackets have been removed and the proper plant specific information/value has been provided.

4. Control rod drop accident (CRDA) initial conditions are developed using NRC approved ComEd methodologies. The resulting sequence is referred to as the "analyzed rod position sequence." Therefore, this Specification has been modified to reflect this site-specific allowance. ITS 3.1.6 has also been modified to reflect this approved sequence.

5. ISTS 3.10.8 is renumbered as ITS 3.10.7 as a result of the deletion of ISTS 3.10.1, "Inservice Leak and Hydrostatic Testing Operation."

1

3.10 SPECIAL OPERATIONS

3.10.9 Recirculation Loops—Testing

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

a. PHYSICS TESTS, provided THERMAL POWER is ≤ [5]% RTP; and

b. Performance of the Startup Test Program.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.9.1	Verify LCO 3.4.1 requirements suspended for ≤ 24 hours.	1 hour

(continued)

1

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.9.2	Verify THERMAL POWER is ≤ [5]% RTP during PHYSICS TESTS.	1 hour

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ISTS: 3.10.9 - RECIRCULATION LOOPS - TESTING

1. The allowance provided by this Specification is not needed at Dresden 2 and 3; consequently, it has been deleted.

1

3.10 SPECIAL OPERATIONS

3.10.10 Training Startups

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

a. All OPERABLE intermediate range monitor (IRM) channels are ≤ [25/40] divisions of full scale on Range 7; and

b. Average reactor coolant temperature is < 200°F.

APPLICABILITY: MODE 2 with one LPCI subsystem suction valve closed.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.10.1	Verify all OPERABLE IRM channels are ≤ [25/40] divisions of full scale on Range 7.	1 hour
SR 3.10.10.2	Verify average reactor coolant temperature is < 200°F.	1 hour

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ISTS: 3.10.10 - TRAINING STARTUPS

1. The allowance provided by this Specification is not needed at Dresden 2 and 3; consequently, it has been deleted.

B 3.10 SPECIAL OPERATIONS

B 3.10.1 Inservice Leak and Hydrostatic Testing Operation

BASES

BACKGROUND

The purpose of this Special Operations LCO is to allow certain reactor coolant pressure tests to be performed in MODE 4 when the metallurgical characteristics of the reactor pressure vessel (RPV) require the pressure testing at temperatures > 200°F (normally corresponding to MODE 3).

Inservice hydrostatic testing and system leakage pressure tests required by Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Ref. 1) are performed prior to the reactor going critical after a refueling outage. Recirculation pump operation and a water solid RPV (except for an air bubble for pressure control) are used to achieve the necessary temperatures and pressures required for these tests. The minimum temperatures (at the required pressures) allowed for these tests are determined from the RPV pressure and temperature (P/T) limits required by LCO 3.4.10, "Reactor Coolant System (RCS) Pressure and Temperature (P/T) Limits." These limits are conservatively based on the fracture toughness of the reactor vessel, taking into account anticipated vessel neutron fluence.

With increased reactor vessel fluence over time, the minimum allowable vessel temperature increases at a given pressure. Periodic updates to the RPV P/T limit curves are performed as necessary, based upon the results of analyses of irradiated surveillance specimens removed from the vessel. Hydrostatic and leak testing will eventually be required with minimum reactor coolant temperatures > 200°F.

The hydrostatic test requires increasing pressure to [ ]% of design pressure (1250 psig) or [ ] psig, and because of the expected increase in reactor vessel fluence, the minimum allowable vessel temperature according to LCO 3.4.10 is increased to [ ]°F. This increase to [ ]% of design pressure does not exceed the Safety Limit of 1375 psig.

(continued)

BASES (continued)

APPLICABLE SAFETY ANALYSES

Allowing the reactor to be considered in MODE 4 during hydrostatic or leak testing, when the reactor coolant temperature is > 200°F, effectively provides an exception to MODE 3 requirements, including OPERABILITY of primary containment and the full complement of redundant Emergency Core Cooling Systems. Since the hydrostatic or leak tests are performed nearly water solid, at low decay heat values, and near MODE 4 conditions, the stored energy in the reactor core will be very low. Under these conditions, the potential for failed fuel and a subsequent increase in coolant activity above the LCO 3.4.7, "RCS Specific Activity," limits are minimized. In addition, the secondary containment will be OPERABLE, in accordance with this Special Operations LCO, and will be capable of handling any airborne radioactivity or steam leaks that could occur during the performance of hydrostatic or leak testing. The required pressure testing conditions provide adequate assurance that the consequences of a steam leak will be conservatively bounded by the consequences of the postulated main steam line break outside of primary containment described in Reference 2. Therefore, these requirements will conservatively limit radiation releases to the environment.

In the event of a large primary system leak, the reactor vessel would rapidly depressurize, allowing the low pressure core cooling systems to operate. The capability of the low pressure coolant injection and core spray subsystems, as required in MODE 4 by LCO 3.5.2, "ECCS—Shutdown," would be more than adequate to keep the core flooded under this low decay heat load condition. Small system leaks would be detected by leakage inspections before significant inventory loss occurred.

For the purposes of this test, the protection provided by normally required MODE 4 applicable LCOs, in addition to the secondary containment requirements required to be met by this Special Operations LCO, will ensure acceptable consequences during normal hydrostatic test conditions and during postulated accident conditions.

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

the NRC Policy Statement apply. Special Operations LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. Operation at reactor coolant temperatures > 200°F can be in accordance with Table 1.1-1 for MODE 3 operation without meeting this Special Operations LCO or its ACTIONS. This option may be required due to P/T limits, however, which require testing at temperatures > 200°F, while the ASME inservice test itself requires the safety/relief valves to be gagged, preventing their OPERABILITY.

If it is desired to perform these tests while complying with this Special Operations LCO, then the MODE 4 applicable LCOs and specified MODE 3 LCOs must be met. This Special Operations LCO allows changing Table 1.1-1 temperature limits for MODE 4 to "NA" and suspending the requirements of LCO 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown." The additional requirements for secondary containment LCOs to be met will provide sufficient protection for operations at reactor coolant temperatures > 200°F for the purpose of performing either an inservice leak or hydrostatic test.

This LCO allows primary containment to be open for frequent unobstructed access to perform inspections, and for outage activities on various systems to continue consistent with the MODE 4 applicable requirements that are in effect immediately prior to and immediately after this operation.

APPLICABILITY

The MODE 4 requirements may only be modified for the performance of inservice leak or hydrostatic tests so that these operations can be considered as in MODE 4, even though the reactor coolant temperature is > 200°F. The additional requirement for secondary containment OPERABILITY according to the imposed MODE 3 requirements provides conservatism in the response of the unit to any event that may occur. Operations in all other MODES are unaffected by this LCO.

(continued)

BASES (continued)

ACTIONS

A Note has been provided to modify the ACTIONS related to inservice leak and hydrostatic testing operation. 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.

A.1

If an LCO specified in LCO 3.10.1 is not met, the ACTIONS applicable to the stated requirements are entered immediately and complied with. Required Action A.1 has been modified by a Note that clarifies the intent of another LCO's Required Action to be in MODE 4 includes reducing the average reactor coolant temperature to ≤ 200°F.

A.2.1 and A.2.2

Required Action A.2.1 and Required Action A.2.2 are alternate Required Actions that can be taken instead of Required Action A.1 to restore compliance with the normal MODE 4 requirements, and thereby exit this Special Operation LCO's Applicability. Activities that could further increase reactor coolant temperature or pressure are suspended immediately, in accordance with Required Action A.2.1, and the reactor coolant temperature is reduced to establish normal MODE 4 requirements. The allowed Completion Time of 24 hours for Required Action A.2.2 is based on engineering judgment and provides sufficient time to reduce the average reactor coolant temperature from the highest expected value to ≤ 200°F with normal cooldown procedures. The Completion Time is also consistent with the time provided in LCO 3.0.3 to reach MODE 4 from MODE 3.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS	SR 3.10.1.1 The LCOs made applicable are required to have their Surveillances met to establish that this LCO is being met. A discussion of the applicable SRs is provided in their respective Bases.
REFERENCES	1. American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section XI. 2. FSAR, Section [15.1.40].

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ISTS BASES: 3.10.1 - INSERVICE LEAK AND HYDROSTATIC TESTING OPERATION

1. This Bases section has been deleted because the associated Specification has been deleted.

5 1

B 3.10 SPECIAL OPERATIONS

B 3.10.2 Reactor Mode Switch Interlock Testing

BASES

BACKGROUND

The purpose of this Special Operations LCO is to permit operation of the reactor mode switch from one position to another to confirm certain aspects of associated interlocks during periodic tests and calibrations in MODES 3, 4, and 5.

The reactor mode switch is a conveniently located, multiposition, keylock switch provided to select the necessary scram functions for various plant conditions (Ref. 1). The reactor mode switch selects the appropriate trip relays for scram functions and provides appropriate bypasses. The mode switch positions and related scram interlock functions are summarized as follows:

a. Shutdown—Initiates a reactor scram; bypasses main steam line isolation and reactor high water level scrams; and low turbine condenser vacuum 1

b. Refuel—Selects Neutron Monitoring System (NMS) scram function for low neutron flux level operation (but does not disable the average power range monitor scram); bypasses main steam line isolation and reactor high water level scrams;

c. Startup/Hot Standby—Selects NMS scram function for low neutron flux level operation (intermediate range monitors and average power range monitors); bypasses main steam line isolation and reactor high water level scrams; and 1

d. Run—Selects NMS scram function for power range operation.

The reactor mode switch also provides interlocks for such functions as control rod blocks, scram discharge volume trip bypass, refueling interlocks, suppression pool makeup, and main steam isolation valve isolations.

BASES (continued) 2

APPLICABLE SAFETY ANALYSES

The ~~acceptance criterion~~ purpose for reactor mode switch interlock testing is to prevent fuel failure by precluding reactivity excursions or core criticality. The interlock functions of the shutdown and refuel positions normally maintained for the reactor mode switch in MODES 3, 4, and 5 are provided to preclude reactivity excursions that could potentially result in fuel failure. Interlock testing that requires moving the reactor mode switch to other positions (run, startup/hot standby, or refuel) while in MODE 3, 4, or 5, requires administratively maintaining all control rods inserted and no ~~other~~ CORE ALTERATIONS in progress. 3 With all control rods inserted in core cells containing one or more fuel assemblies, and no CORE ALTERATIONS in progress, there are no credible mechanisms for unacceptable reactivity excursions during the planned interlock testing.

For postulated accidents, such as control rod removal error during refueling ~~or loading of fuel with a control rod withdrawn~~, the accident analysis demonstrates that fuel failure will not occur (Ref~~s~~. 2 ~~and 3~~). The withdrawal of a single control rod will not result in criticality when adequate SDM is maintained. Also, loading fuel assemblies into the core with a single control rod withdrawn will not result in criticality, thereby preventing fuel failure. 1

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of ~~the NRC Policy Statement~~ 10CFR 50.36(c)(2)(ii) apply. 1 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. MODES 3, 4, and 5 operations not specified in Table 1.1-1 can be performed in accordance with other Special Operations LCOs (i.e., ~~LCO 3.10.1, "Inservice Leak and Hydrostatic Testing Operation,"~~ LCO 3.10.~~3~~ 2, "Single Control Rod Withdrawal—Hot Shutdown," LCO 3.10.~~4~~ 3, "Single Control Rod Withdrawal—Cold Shutdown," and LCO 3.10.~~8~~ 7, "SDM Test—Refueling") without meeting this LCO or its ACTIONS. 5 If any testing is performed that involves the reactor mode switch interlocks and requires repositioning beyond that specified in Table 1.1-1 for the

(continued)

BASES

LCO (continued)

current MODE of operation, the testing can be performed, provided all interlock functions potentially defeated are administratively controlled. In MODES 3, 4, and 5 with the reactor mode switch in shutdown as specified in Table 1.1-1, all control rods are fully inserted and a control rod block is initiated. Therefore, all control rods in core cells that contain one or more fuel assemblies must be verified fully inserted while in MODES 3, 4, and 5, with the reactor mode switch in other than the shutdown position. The additional LCO requirement to preclude CORE ALTERATIONS is appropriate for MODE 5 operations, as discussed below, and is inherently met in MODES 3 and 4 by the definition of CORE ALTERATIONS, which cannot be performed with the vessel head in place.

In MODE 5, with the reactor mode switch in the refuel position, only one control rod can be withdrawn under the refuel position one-rod-out interlock (LCO 3.9.2, "Refuel Position One-Rod-Out Interlock"). The refueling equipment interlocks (LCO 3.9.1, "Refueling Equipment Interlocks") appropriately control other CORE ALTERATIONS. Due to the increased potential for error in controlling these multiple interlocks, and the limited duration of tests involving the reactor mode switch position, conservative controls are required, consistent with MODES 3 and 4. The additional controls of administratively not permitting other CORE ALTERATIONS will adequately ensure that the reactor does not become critical during these tests.

APPLICABILITY

Any required periodic interlock testing involving the reactor mode switch, while in MODES 1 and 2, can be performed without the need for Special Operations exceptions. Mode switch manipulations in these MODES would likely result in unit trips. In MODES 3, 4, and 5, this Special Operations LCO is only permitted to be used to allow reactor mode switch interlock testing that cannot conveniently be performed without this allowance 2 or testing that must be performed prior to entering another MODE. Such interlock testing may consist of required Surveillances, or may be the result of maintenance, repair, or troubleshooting activities. In MODES 3, 4, and 5, the interlock functions provided by the reactor mode switch in shutdown (i.e., all control rods inserted and incapable of withdrawal) and refueling (i.e., refueling interlocks to prevent inadvertent criticality during CORE ALTERATIONS) positions can be

(continued)

BASES

APPLICABILITY (continued)

administratively controlled adequately during the performance of certain tests.

ACTIONS

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

These Required Actions are provided to restore compliance with the Technical Specifications overridden by this Special Operations LCO. Restoring compliance will also result in exiting the Applicability of this Special Operations LCO.

All CORE ALTERATIONS, except control rod insertion, if in progress, are immediately suspended in accordance with Required Action A.1, and all insertable control rods in core cells that contain one or more fuel assemblies are fully inserted within 1 hour, in accordance with Required Action A.2. This will preclude potential mechanisms that could lead to criticality. Control rods in core cells containing no fuel assemblies do not affect the reactivity of the core and, therefore, do not have to be inserted. 3 Suspension of CORE ALTERATIONS shall not preclude the completion of movement of a component to a safe condition. Placing the reactor mode switch in the shutdown position will ensure that all inserted control rods remain inserted and result in operating in accordance with Table 1.1-1. Alternatively, if in MODE 5, the reactor mode switch may be placed in the refuel position, which will also result in operating in accordance with Table 1.1-1. A Note is added to Required Action A.3.2 to indicate that this Required Action is not applicable in MODES 3 and 4, since only the shutdown position is allowed in these MODES. The allowed Completion Time of 1 hour for Required Action A.2, Required Action A.3.1, and Required Action A.3.2 provides sufficient time to normally insert the control rods and place the reactor mode switch in the required position, based on operating experience, and is acceptable given that all operations that could increase core reactivity have been suspended.

SURVEILLANCE REQUIREMENTS

SR 3.10.~~2~~1.1 and SR 3.10.~~2~~1.2 1 5

Meeting the requirements of this Special Operations LCO maintains operation consistent with or conservative to operating with the reactor mode switch in the shutdown position (or the refuel position for MODE 5). The functions of the reactor mode switch interlocks that are not in

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.10.2.1 and SR 3.10.2.2 (continued) 1

effect, due to the testing in progress, are adequately compensated for by the Special Operations LCO requirements. The administrative controls are to be periodically verified to ensure that the operational requirements continue to be met. 2 INSERT SR 3.10.1.1 and SR 3.10.1.2 The Surveillances performed at the 12 hour and 24 hour Frequencies are intended to provide appropriate assurance that each operating shift is aware of and verifies compliance with these Special Operations LCO requirements.

REFERENCES 1 u

1. FSAR, Chapter [7]. 7.2.2 4
2. FSAR, Section [15.1.13]. 15.4.1
3. ~~FSAR, Section [15.1.14].~~

$\boxed{2}$ Insert SR 3.10.1.1 and 3.10.1.2

In addition, the all rods fully inserted Surveillance (SR 3.10.1.1) must be verified by a second licensed operator (Reactor Operator or Senior Reactor Operator) or other task qualified member of the technical staff (e.g., a shift technical advisor or reactor engineer).

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.10.1 - REACTOR MODE SWITCH INTERLOCK TESTING

1. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

2. Editorial change made for enhanced clarity or to be consistent with similar statements in other places in the Bases.

3. The Bases have been changed to be consistent with the Specification.

4. The brackets have been removed and the proper plant specific information/value has been provided.

5. The Bases have been changed to reflect changes made to the Specification.

B 3.10 SPECIAL OPERATIONS

2 2 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., rod exercising, 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 removal error 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 u 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)

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 1 10 CFR 50.36(c)(2)(ii) ~~the NRC Policy Statement~~ apply. Special Operations LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. Operation in MODE 3 with the reactor mode switch in the refuel position can be performed in accordance with other Special Operations LCOs (i.e., 2 1 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

(continued)

BASES

LCO (continued)

withdrawn-untrippable control rod to be the single highest worth control rod.

APPLICABILITY

2 3

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.

LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring,"

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.

[2] 2

SURVEILLANCE REQUIREMENTS

SR 3.10.2.1, SR 3.10.2.2, and SR 3.10.2.3

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 2 [2]
SR 3.10.2.2 is required to preclude the possibility of criticality. [3] INSERT SR 3.10.2.2 SR 3.10.2.2 has been modified by a Note, which clarifies that this SR is not required to be met if 2
SR 3.10.2.1 is satisfied for LCO 3.10.2.d.1 requirements, since SR 3.10.2.2 demonstrates that the alternative LCO 3.10.2.d.2 requirements are satisfied. Also, SR 3.10.2.3 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)

3 Insert SR 3.10.2.2

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

BASES 2

SURVEILLANCE REQUIREMENTS

SR 3.10.2.1, SR 3.10.2.2, and SR 3.10.2.3 (continued)

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

1 u 4

REFERENCES

1. UFSAR, Section [15.1.13]. 15.4.1

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.10.2 - SINGLE CONTROL ROD WITHDRAWAL — HOT SHUTDOWN

1. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

2. The Bases have been changed to be consistent with changes made to the Specification.

3. Editorial changes have been made for enhanced clarity or to be consistent with similar statements in other places in the Bases.

4. The brackets have been removed and the proper plant specific information/value has been provided.

B 3.10 SPECIAL OPERATIONS

2 3

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., rod exercising, 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.

1

APPLICABLE SAFETY ANALYSES

With the reactor mode switch in the refuel position, the analyses for control rod ~~withdrawal~~ removal error 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 UFSAR (Ref. 1) demonstrate that the functioning of the refueling interlocks and adequate SDM will preclude unacceptable reactivity excursions. 1

1

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)

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 scrammed.

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of ~~the NRC Policy Statement~~ 10 CFR 50.36(c)(2)(ii) 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 1, "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. 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.

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)

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.

1 by electrically or hydraulically disarming the CRD

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. 2 2

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.

2 LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring,"

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 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. 4 3

(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.~~ [3] This Required Action includes exiting this Special Operations LCO 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)

2 3

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. INSERT SR 3.10.3.2 4 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.

2 3

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.

1

REFERENCES

1. U FSAR, Section ~~[15.1.13]~~ 15.4.1 5

$\boxed{4}$ Insert SR 3.10.3.2

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

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.10.3 - SINGLE CONTROL ROD WITHDRAWAL — COLD SHUTDOWN

1. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

2. The Bases have been changed to be consistent with changes made to the Specification.

3. Typographical/grammatical error corrected.

4. Editorial change made for enhanced clarity or to be consistent with similar statements in other places in the Bases.

5. The brackets have been removed and the proper plant specific information/value has been provided.

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 , in 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. 1

2 —

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 the refueling interlocks 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"). 1

(continued)

BASES (continued)

APPLICABLE SAFETY ANALYSES

With the reactor mode switch in the refuel position, the analyses for control rod ~~withdrawal~~ removal error 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 U FSAR (Ref. 1) demonstrate that proper operation of the refueling interlocks and adequate SDM will preclude unacceptable reactivity excursions. 3

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 that no other ~~to suspend all~~ CORE ALTERATIONS are in progress adequately compensates for the inoperable all ~~rods in permissive for the refueling equipment interlocks~~ (LCO 3.9.1). 4 2

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, and all other control rods are inserted and incapable of being withdrawn ~~(by insertion of a control rod block)~~. 1 4

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) ~~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. 3

(continued)

BASES (continued)

LCO

As described in LCO 3.0.7, compliance with this Special 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, 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.

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~~ 4 that no other ~~suspend all~~ CORE ALTERATIONS are in progress 4 adequately compensates for the 2 ~~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 (by electrically or hydraulically disarming the CRD) 3 adequately satisfies the backup protection that LCO 3.3.1.1 and LCO 3.9.2 would have otherwise provided. Also, once 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.

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)

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.

4 4

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. INSERT SR 3.10.4.2 1 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.

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

(continued)

$\boxed{1}$ <u>Insert SR 3.10.4.2</u>

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

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) 4

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

3 u

REFERENCES

1. FSAR, Section ~~[15.1.13]~~ 15.4.1 5

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.10.4 - SINGLE CONTROL ROD DRIVE REMOVAL — REFUELING

1. Editorial change made for enhanced clarity or to be consistent with similar statements in other places in the Bases.

2. Typographical/grammatical error corrected.

3. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

4. The Bases have been changed to reflect those changes made to the Specification.

5. The brackets have been removed and the proper plant specific information/value has been provided.

B 3.10 SPECIAL OPERATIONS

B 3.10.6 Multiple Control Rod Withdrawal—Refueling

BASES

BACKGROUND

The purpose of this MODE 5 Special Operations LCO is to permit multiple control rod withdrawal during refueling 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 , in refueling operations, no more than one control rod is permitted to be withdrawn from a core cell containing one or more fuel assemblies. When all four fuel assemblies are removed from a cell, the control rod may be withdrawn with no restrictions. Any number of control rods may be withdrawn and removed from the reactor vessel if their cells contain no fuel. 1

2 – 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.

To allow more than one control rod to be withdrawn during refueling, these interlocks must be defeated. This Special Operations LCO establishes the necessary administrative controls to allow bypassing the "full in" position indicators. – 2

u 3

APPLICABLE SAFETY ANALYSES

Explicit safety analyses in the UFSAR (Ref. 1) demonstrate that the functioning of the refueling interlocks and adequate SDM will prevent unacceptable reactivity excursions during refueling. To allow multiple control rod withdrawals, control rod removals, associated control rod drive (CRD) removal, or any combination of these, the "full in" position indication is allowed to be bypassed for each withdrawn control rod if all fuel has been removed from the – 2

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

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

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of ~~the NRC Policy Statement~~ 10 CFR 50.36(c)(2)(ii) 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 LCO 3.9.3, "Control Rod Position," LCO 3.9.4, "Control Rod Position Indication," or LCO 3.9.5, "Control Rod OPERABILITY—Refueling," not met, can be performed in accordance with the Required Actions of these LCOs without meeting this Special Operations LCO or its ACTIONS. If multiple control rod withdrawal or removal, or CRD removal is desired, all four fuel assemblies are required to be removed from the associated cells. Prior to entering this LCO, any fuel remaining in a cell whose CRD was previously removed under the provisions of another LCO must be removed. "Withdrawal" in this application includes the actual withdrawal of the control rod as well as maintaining the control rod in a position other than the full-in position, and reinserting the control rod.

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

(continued)

BASES (continued)

APPLICABILITY

Operation in MODE 5 is controlled by existing LCOs. The exceptions from other LCO requirements (e.g., the ACTIONS of LCO 3.9.3, LCO 3.9.4, or LCO 3.9.5) allowed by this Special Operations LCO are appropriately controlled by requiring all fuel to be removed from cells whose "full in" indicators are allowed to be bypassed. – 2

ACTIONS 4 A.2, 3

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 refueling (i.e., all control rods inserted in core cells containing one or more fuel assemblies) or with the exceptions granted by this Special Operations LCO. The Completion Times 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 affected CRDs and insert their control rods, or initiate action to restore compliance with this Special Operations LCO.

4 Required Action A.2, 3 4

SURVEILLANCE REQUIREMENTS 5 6

SR 3.10.8.1, SR 3.10.8.2, and SR 3.10.8.3

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

REFERENCES 3 u

1. FSAR, Section ~~15.1.13~~. 15.4.1 5

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.10.5 - MULTIPLE CONTROL ROD WITHDRAWAL — REFUELING

1. Editorial changes made for enhanced clarify or to be consistent with similar statements in other places in the Bases.

2. Typographical/grammatical error corrected.

3. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

4. The Bases have been changed to be consistent with the Specification.

5. The brackets have been removed and the proper plant specific information/value has been provided.

6. The Bases have been changed to be consistent with changes made to the Specification.

1 6

B 3.10 SPECIAL OPERATIONS

B 3.10.~~7~~ Control Rod Testing—Operating

BASES

BACKGROUND

The purpose of this Special Operations LCO is to permit control rod testing, while in MODES 1 and 2, by imposing certain administrative controls. Control rod patterns during startup conditions are controlled by the operator and the rod worth minimizer (RWM) (LCO 3.3.2.1, "Control Rod Block Instrumentation"), such that only the specified control rod sequences and relative positions required by LCO 3.1.6, "Rod Pattern Control," are allowed over the operating range from all control rods inserted to the low power setpoint (LPSP) of the RWM. The sequences effectively limit the potential amount and rate of reactivity increase that could occur during a control rod drop accident (CRDA). During these conditions, control rod testing is sometimes required that may result in control rod patterns not in compliance with the prescribed sequences of LCO 3.1.6. These tests include SDM demonstrations, control rod scram time testing, control rod friction testing, and ~~testing performed during the Startup Test Program~~. This Special Operations LCO provides the necessary exemption to the requirements of LCO 3.1.6 and provides additional administrative controls to allow the deviations in such tests from the prescribed sequences in LCO 3.1.6. 1

APPLICABLE SAFETY ANALYSES

2

The analytical methods and assumptions used in evaluating the CRDA are summarized in References ~~1 and 2~~ (1, 2, 3, 4 and 5). CRDA analyses assume the reactor operator follows prescribed withdrawal sequences. These sequences define the potential initial conditions for the CRDA analyses. The RWM provides backup to operator control of the withdrawal sequences to ensure the initial conditions of the CRDA analyses are not violated. For special sequences developed for control rod testing, the initial control rod patterns assumed in the safety analysis of References ~~1 and 2~~ may not be preserved. Therefore special CRDA analyses are required to demonstrate that these special sequences will not result in unacceptable consequences, should a CRDA occur during the testing. These analyses, performed in accordance with an NRC approved methodology, are dependent on the specific test being performed.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

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

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

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. Control rod testing may be performed in compliance with the prescribed sequences of LCO 3.1.6, and during these tests, no exceptions to the requirements of LCO 3.1.6 are necessary. For testing performed with a sequence not in compliance with LCO 3.1.6, the requirements of LCO 3.1.6 may be suspended, provided additional administrative controls are placed on the test to ensure that the assumptions of the special safety analysis for the test sequence are satisfied. Assurances that the test sequence is followed can be provided by either programming the test sequence into the RWM, with conformance verified as specified in SR 3.3.2.1.8 and allowing the RWM to monitor control rod withdrawal and provide appropriate control rod blocks if necessary, or by verifying conformance to the approved test sequence by a second licensed operator (Reactor Operator or Senior Reactor Operator) or other task qualified member of the technical staff (e.g., shift technical advisor or reactor engineer). These controls are consistent with those normally applied to operation in the startup range as defined in the SRs and ACTIONS of LCO 3.3.2.1, "Control Rod Block Instrumentation."

3 3 3

APPLICABILITY

4 10% RTP

Control rod testing, while in MODES 1 and 2, with THERMAL POWER greater than ~~the LPSP of the RWM~~, is adequately controlled by the existing LCOs on power distribution limits and control rod block instrumentation. Control rod movement during these conditions is not restricted to prescribed sequences and can be performed within the constraints of LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," and LCO 3.3.2.1. With THERMAL POWER less than or equal to ~~the LPSP of the RWM~~, the provisions of this Special Operations LCO are necessary to perform special tests that are not in conformance with the prescribed sequences of LCO 3.1.6.

(continued)

BASES

APPLICABILITY (continued)

While in MODES 3 and 4, control rod withdrawal is only allowed if performed in accordance with Special Operations LCO 3.10.2, "Single Control Rod Withdrawal—Hot Shutdown," or Special Operations LCO 3.10.3, "Single Control Rod Withdrawal—Cold Shutdown," which provide adequate controls to ensure that the assumptions of the safety analyses of Reference 1 and 2 are satisfied. During these Special Operations and while in MODE 5, the one-rod-out interlock (LCO 3.9.2, "Refuel Position One-Rod-Out Interlock,") 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 prescribed in the applicable Special Operations LCOs, provide mitigation of potential reactive excursions. ity 6

ACTIONS

A.1

With the requirements of the LCO not met (e.g., the control rod pattern is not in compliance with the special test sequence, the sequence is improperly loaded in the RWM) the testing is required to be immediately suspended. Upon suspension of the special test, the provisions of LCO 3.1.6 are no longer excepted, and appropriate actions are to be taken to restore the control rod sequence to the prescribed sequence of LCO 3.1.6, or to shut down the reactor, if required by LCO 3.1.6.

SURVEILLANCE REQUIREMENTS

1 6 SR 3.10.7.1

task 3

3 (Reactor Operator or Senior Reactor Operator)

(e.g., shift technical advisor or reactor engineer)

With the special test sequence not programmed into the RWM, a second licensed operator or other qualified member of the technical staff is required to verify conformance with the approved sequence for the test. ~~(Note: A member of the technical staff is considered to be qualified if he possesses skills equal to a licensed operator [in the following areas:].)~~ 5 This verification must be performed during control rod movement to prevent deviations from the specified sequence. A Note is added to indicate that this Surveillance does not need to be performed if SR 3.10.7.2 is satisfied. 6 1

met 7

(continued)

BASES

6 1

SURVEILLANCE REQUIREMENTS (continued)

SR 3.10.~~7~~.2

When the RWM provides conformance to the special test sequence, the test sequence must be verified to be correctly loaded into the RWM prior to control rod movement. This Surveillance demonstrates compliance with SR 3.3.2.1.8, thereby demonstrating that the RWM is OPERABLE. A Note has been added to indicate that this Surveillance does not need to be ~~performed~~ met if SR 3.10.~~7~~.1 is satisfied. 7

REFERENCES

INSERT Ref-1

3 ~~1~~. NEDE-24011-P-A-US, General Electric Standard Application for Reactor Fuel, ~~Supplement for United States (as amended)~~ as specified in Technical Specification 5.6.5. 2

4 ~~2~~. Letter from T. Pickens (BWROG) to G.C. Lainas (NRC) "Amendment 17 to General Electric Licensing Topical Report NEDE-24011-P-A," BWROG-8644, August 15, 1986.

INSERT Ref-2

2 Insert Ref-1

1. UFSAR, Section 15.4.10.

2. XN-NF-80-19(P)(A), Volume 1, Supplement 2, Section 7.1, Exxon Nuclear Methodology for Boiling Water Reactor Neutronics Methods for Design Analysis, (as specified in Technical Specification 5.6.5).

2 Insert Ref-2

5. NFSR-0091, Benchmark of CASMO/MICROBURN BWR Nuclear Design Methods, Commonwealth Edison Topical Report, (as specified in Technical Specification 5.6.5).

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.10.6 - CONTROL ROD TESTING — OPERATING

1. The Bases have been changed to reflect those changes made to the Specification.

2. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

3. Editorial change made for enhanced clarity or to be consistent with similar statements in other places in the Bases.

4. Changes have been made to reflect the actual requirements in LCO 3.1.6.

5. The brackets have been removed and the proper plant specific information/value has been provided.

6. Typographical error corrected.

7. The Bases have been changed to be consistent with the Specification.

B 3.10 SPECIAL OPERATIONS

2 — 7 — B 3.10.8 SHUTDOWN MARGIN (SDM) Test—Refueling

BASES

BACKGROUND

The purpose of this MODE 5 Special Operations LCO is to permit SDM testing to be performed for those plant configurations in which the reactor pressure vessel (RPV) head is either not in place or the head bolts are not fully tensioned.

LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," requires that adequate SDM be demonstrated following fuel movements or control rod replacement within the RPV. The demonstration must be performed prior to or within 4 hours after criticality is reached. This SDM test may be performed prior to or during the first startup following the refueling. Performing the SDM test prior to startup requires the test to be performed while in MODE 5, with the vessel head bolts less than fully tensioned (and possibly with the vessel head removed). While in MODE 5, the reactor mode switch is required to be in the shutdown or refuel position, where the applicable control rod blocks ensure that the reactor will not become critical. The SDM test requires the reactor mode switch to be in the startup/hot standby position, since more than one control rod will be withdrawn for the purpose of demonstrating adequate SDM. This Special Operations LCO provides the appropriate additional controls to allow withdrawing more than one control rod from a core cell containing one or more fuel assemblies when the reactor vessel head bolts are less than fully tensioned.

APPLICABLE SAFETY ANALYSES

Prevention and mitigation of unacceptable reactivity excursions during control rod withdrawal, with the reactor mode switch in the startup/hot standby position while in MODE 5, is provided by the intermediate range monitor (IRM) neutron flux scram (LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation"), and control rod block instrumentation (LCO 3.3.2.1, "Control Rod Block Instrumentation"). The limiting reactivity excursion during startup conditions while in MODE 5 is the control rod drop accident (CRDA).

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

CRDA analyses assume that the reactor operator follows prescribed withdrawal sequences. For SDM tests performed within these defined sequences, the analyses of References ~~1 and 2~~ 1, 2, 3, 4, and 5 are applicable. However, for some sequences developed for the SDM testing, the control rod patterns assumed in the safety analyses of References ~~1 and 2~~ may not be met. Therefore, special CRDA analyses, performed in accordance with an NRC approved methodology, are required to demonstrate the SDM test sequence will not result in unacceptable consequences should a CRDA occur during the testing. For the purpose of this test, the protection provided by the normally required MODE 5 applicable LCOs, in addition to the requirements of this LCO, will maintain normal test operations as well as postulated accidents within the bounds of the appropriate safety analyses (Refs. ~~1 and 2~~). 1 In addition to the added requirements for the RWM, APRM, and control rod coupling, the notch out mode is specified for out of sequence withdrawals. Requiring the notch out mode limits withdrawal steps to a single notch, which limits inserted reactivity, and allows adequate monitoring of changes in neutron flux, which may occur during the test.

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of 1 10 CFR 50.36(c)(2)(ii) ~~the NRC Policy Statement~~ apply. Special Operations LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. SDM tests may be performed while in MODE 2, in accordance with Table 1.1-1, without meeting this Special Operations LCO or its ACTIONS. For SDM tests performed while in MODE 5, additional requirements must be met to ensure that adequate protection against potential reactivity excursions is available. To provide additional scram protection, beyond the normally required IRMs, the APRMs are also required to be OPERABLE (LCO 3.3.1.1, Functions 2.a and 2.e d 2) as though the reactor were in MODE 2. Because multiple control rods will be withdrawn and the reactor will potentially become critical, ~~RPS MODE 2 requirements for Functions 2.a and 2.e of Table 3.3.1.1-1~~ 3

(continued)

BASES

LCO (continued)

3 ~~must be enforced and~~ the approved control rod withdrawal sequence must be enforced by the RWM (LCO 3.3.2.1, Function 2, MODE 2), or must be verified by a second licensed operator (Reactor Operator or Senior Reactor Operator) or other qualified member of the technical staff (e.g., a shift technical advisor or reactor engineer). 4 To provide additional protection against an inadvertent criticality, control rod withdrawals that do not conform to the ~~banked~~ analyzed rod position ~~withdrawal~~ sequence specified in LCO 3.1.6, "Rod Pattern Control," (i.e., out of sequence control rod withdrawals) must be made in the individual notched withdrawal mode to minimize the potential reactivity insertion associated with each movement. 2 Coupling integrity of withdrawn control rods is required to minimize the probability of a CRDA and ensure proper functioning of the withdrawn control rods, if they are required to scram. Because the reactor vessel head may be removed during these tests, no other CORE ALTERATIONS may be in progress. Furthermore, since the control rod scram function with the RCS at atmospheric pressure relies solely on the CRD accumulator, it is essential that the CRD charging water header remain pressurized. This Special Operations LCO then allows changing the Table 1.1-1 reactor mode switch position requirements to include the startup/hot standby position, such that the SDM tests may be performed while in MODE 5.

task 4

APPLICABILITY

These SDM test Special Operations requirements are only applicable if the SDM tests are to be performed while in MODE 5 with the reactor vessel head removed or the head bolts not fully tensioned. Additional requirements during these tests to enforce control rod withdrawal sequences and restrict other CORE ALTERATIONS provide protection against potential reactivity excursions. Operations in all other MODES are unaffected by this LCO.

ACTIONS

A.1 and A.2 6

With one or more control rods discovered uncoupled during this Special Operation, a controlled insertion of each uncoupled control rod is required; either to attempt recoupling, or to preclude a control rod drop. This controlled insertion is preferred since, if the control rod fails to follow the drive as it is withdrawn (i.e., is "stuck" in an inserted position), placing the reactor mode

(continued)

BASES 6

ACTIONS

A.1 and A.2 (continued)

switch in the shutdown position per Required Action B.1 could cause substantial secondary damage. If recoupling is not accomplished, operation may continue, provided the control rods are fully inserted within 3 hours and disarmed (electrically or hydraulically) within 4 hours. Inserting a control rod ensures the shutdown and scram capabilities are not adversely affected. The control rod is disarmed to prevent inadvertent withdrawal during subsequent operations. The control rods can be hydraulically disarmed by closing the drive water and exhaust water isolation valves. Electrically the control rods can be disarmed by disconnecting power from all four directional control valve solenoids. Required Action A.1 is modified by a Note that allows the RWM to be bypassed if required to allow insertion of the inoperable control rods and continued operation. LCO 3.3.2.1, "Control Rod Block Instrumentation," Actions provide additional requirements when the RWM is bypassed to ensure compliance with the CRDA analysis.

The allowed Completion Times are reasonable, considering the small number of allowed inoperable control rods, and provide time to insert and disarm the control rods in an orderly manner and without challenging plant systems.

Condition A is modified by a Note allowing separate Condition entry for each uncoupled control rod. This is acceptable since the Required Actions for this Condition provide appropriate compensatory actions for each uncoupled control rod. Complying with the Required Actions may allow for continued operation. Subsequent uncoupled control rods are governed by subsequent entry into the Condition and application of the Required Actions.

B.1

With one or more of the requirements of this LCO not met for reasons other than an uncoupled control rod, the testing should be immediately stopped by placing the reactor mode switch in the shutdown or refuel position. This results in a condition that is consistent with the requirements for MODE 5 where the provisions of this Special Operations LCO are no longer required.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

~~SR 3.10.8.1~~

~~Performance of the applicable SRs for LCO 3.3.1.1, Functions 2.a and 2.d will ensure that the reactor is operated within the bounds of the safety analysis.~~ 5

2 7 SR 3.10.8.1, SR 3.10.8.2, and SR 3.10.8.3 d 2

LCO 3.3.1.1, Functions 2.a and 2.e, made applicable in this Special Operations LCO, are required to have applicable Surveillances met to establish that this Special Operations LCO is being met (SR 3.10.7.1) 2. However, the control rod withdrawal sequences during the SDM tests may be enforced by the RWM (LCO 3.3.2.1, Function 2, MODE 2 requirements) or by a second licensed operator (Reactor Operator or Senior Reactor Operator) 4 or other task qualified member of the technical staff (e.g., a shift technical advisor or reactor engineer). As noted, either the applicable SRs for the RWM (LCO 3.3.2.1) must be satisfied according to the applicable Frequencies (SR 3.10.8.2), or the proper movement of control rods must be verified (SR 3.10.8.3). This latter verification (i.e., SR 3.10.8.3) must be performed during control rod movement to prevent deviations from the specified sequence. These surveillances provide adequate assurance that the specified test sequence is being followed. 7 2

2 7 SR 3.10.8.4

Periodic verification of the administrative controls established by this LCO will ensure that the reactor is operated within the bounds of the safety analysis. The 12 hour Frequency is intended to provide appropriate assurance that each operating shift is aware of and verifies compliance with these Special Operations LCO requirements.

SR 3.10.8.5

Coupling verification is performed to ensure the control rod is connected to the control rod drive mechanism and will perform its intended function when necessary. The verification is required to be performed any time a control rod is withdrawn to the ~~"full out"~~ notch position, or prior to declaring the control rod OPERABLE after work on the control rod or CRD System that could affect coupling. This

(continued)

BASES

2

SURVEILLANCE REQUIREMENTS

7 SR 3.10.8.5 (continued)

Frequency is acceptable, considering the low probability that a control rod will become uncoupled when it is not being moved as well as operating experience related to uncoupling events.

SR 3.10.8.6

CRD charging water header pressure verification is performed to ensure the motive force is available to scram the control rods in the event of a scram signal. ~~A minimum accumulator pressure is specified, below which the capability of the accumulator to perform its intended function becomes degraded and the accumulator is considered inoperable.~~ INSERT SR 3.10.7.6 6 The minimum ~~accumulator~~ pressure of 940 psig is well below the expected pressure of ~~1100~~ approximately 1500 psig 1 while still ensuring sufficient pressure for rapid control rod insertion. The 7 day Frequency has been shown to be acceptable through operating experience and takes into account indications available in the control room.

INSERT Ref-1

REFERENCES

3 ~~1~~. NEDE-24011-P-A-US, General Electric Standard Application for Reactor Fuel, ~~Supplement for United States (as amended)~~ as specified in Technical Specification 5.6.5.

4 ~~2~~. Letter from T. Pickens (BWROG) to G.C. Lainas, NRC, "Amendment 17 to General Electric Licensing Topical Report NEDE-24011-P-A," BWROG-8644, August 15, 1986.

~~3. [Plant specific transient analysis].~~

~~4. [Plant specific reload analysis].~~

INSERT Ref-2

1

6 Insert SR 3.10.7.6

Since the reactor is depressurized in MODE 5, there is insufficient reactor pressure to scram the control rods. Verification of charging water header pressure ensures that if a scram were required, capability for rapid control rod insertion would exist.

1 Insert Ref-1

1. UFSAR, Section 15.4.10.
2. XN-NF-80-19(P)(A), Volume 1, Supplement 2, Section 7.1, Exxon Nuclear Methodology for Boiling Water Reactor Neutronics Methods for Design Analysis, (as specified in Technical Specification 5.6.5).

1 Insert Ref-2

5. NFSR-0091, Benchmark of CASMO/MICROBURN BWR Nuclear Design Methods, Commonwealth Edison Topical Report, (as specified in Technical Specification 5.6.5).

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ITS BASES: 3.10.7 - SDM TEST — REFUELING

1. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, analysis description, or licensing basis description.

2. The Bases have been changed to reflect those changes made to the Specification.

3. This statement has been deleted since it is duplicative of the previous sentence.

4. Editorial change made for enhanced clarity or to be consistent with similar statements in other places in the Bases.

5. Typographical/grammatical error corrected.

6. The Bases have been changed to be consistent with the Specification.

1

B 3.10 SPECIAL OPERATIONS

B 3.10.9 Recirculation Loops—Testing

BASES

BACKGROUND

The purpose of this Special Operations LCO in MODES 1 and 2 is to allow either PHYSICS TESTS or the Startup Test Program to be performed with less than two recirculation loops in operation.

Testing performed as part of the Startup Test Program (Ref. 1), or PHYSICS TESTS authorized under the provisions of 10 CFR 50.59 (Ref. 2) or otherwise approved by the NRC, may be required to be performed under natural circulation conditions with the reactor critical. LCO 3.4.1, "Recirculation Loops Operating," requires that one or both recirculation loops be in operation during MODES 1 and 2. This Special Operations LCO provides the appropriate additional restrictions to allow testing at natural circulation conditions or in single loop operation with the reactor critical.

APPLICABLE SAFETY ANALYSES

The operation of the Reactor Coolant Recirculation System is an initial condition assumed in the design basis loss of coolant accident (LOCA) (Ref. 3). During a LOCA caused by a recirculation loop pipe break, the intact loop is assumed to provide coolant flow during the first few seconds of the postulated accident. During PHYSICS TESTS ≤ [5]% RTP, or limited testing during the Startup Test Program for the initial cycle, the decay heat in the reactor is sufficiently low, such that the consequences of an accident are reduced and the coastdown characteristics of the recirculation loops are not important. In addition, the probability of a Design Basis Accident (DBA) or other accidents occurring during the limited time allowed at natural circulation or in single loop operation is low.

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.

(continued)

1

BASES (continued)

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. However, to perform testing at natural circulation conditions or with a single operating loop, operations must be limited to those tests defined in the Startup Test Program or approved PHYSICS TESTS performed at ≤ [5]% RTP. To minimize the probability of an accident, while operating at natural circulation conditions or with one operating loop, the duration of these tests is limited to ≤ 24 hours. This Special Operations LCO then allows suspension of the requirements of LCO 3.4.1 during such testing. In addition to the requirements of this LCO, the normally required MODE 1 or MODE 2 applicable LCOs must be met.

APPLICABILITY

This Special Operations LCO may only be used while performing testing at natural circulation conditions or while operating with a single loop, as may be required as part of the Startup Test Program or during low power PHYSICS TESTS. Additional requirements during these tests to limit the time at natural circulation conditions reduces the probability that a DBA may occur with both recirculation loops not in operation. Operations in all other MODES are unaffected by this LCO.

ACTIONS

A.1

With the testing performed at natural circulation conditions or with a single operating loop, and the duration of the test exceeding the 24 hour time limit, actions should be taken to promptly shut down. Inserting all insertable control rods will result in a condition that does not require both recirculation loops to be in operation. The allowed Completion Time of 1 hour provides sufficient time to normally insert the withdrawn control rods.

B.1

With the requirements of this LCO not met for reasons other than those specified in Condition A (i.e., low power PHYSICS TESTS exceeding [5]% RTP, or unapproved testing at natural circulation), the reactor mode switch should immediately be

(continued)

1

BASES

ACTIONS

B.1 (continued)

placed in the shutdown position. This results in a condition that does not require both recirculation loops to be in operation. The action to immediately place the reactor mode switch in the shutdown position prevents unacceptable consequences from an accident initiated from outside the analysis bounds. Also, operation beyond authorized bounds should be terminated upon discovery.

SURVEILLANCE REQUIREMENTS

SR 3.10.9.1 and SR 3.10.9.2

Periodic verification of the administrative controls established by this LCO will ensure that the reactor is operated within the bounds of this LCO. Because the 1 hour Frequency provides frequent checks of the LCO requirements during the allowed 24 hour testing interval, the probability of operation outside the limits concurrent with a postulated accident is reduced even further.

REFERENCES

1. FSAR, Chapter [14].
2. 10 CFR 50.59.
3. FSAR, Section [6.3.3.4].
4. FSAR, Section [ ].

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ISTS BASES: 3.10.9 - RECIRCULATION LOOPS - TESTING

1. This Bases section has been deleted because the associated Specification has been deleted.

B 3.10 SPECIAL OPERATIONS

B 3.10.10 Training Startups

BASES

BACKGROUND

The purpose of this Special Operations LCO is to permit training startups to be performed while in MODE 2 to provide plant startup experience for reactor operators. This training involves withdrawal of control rods to achieve criticality and then further withdrawal of control rods, as would be experienced during an actual plant startup. During these training startups, if the reactor coolant is allowed to heat up, maintenance of a constant reactor vessel water level requires the rejection of reactor coolant through the Reactor Water Cleanup System as the reactor coolant specific volume increases. Since this results in reactor water discharge to the radioactive waste disposal system, the amount of discharge should be minimized. This Special Operations LCO provides the appropriate additional controls to allow one residual heat removal (RHR) subsystem to be aligned in the shutdown cooling mode, so that the reactor coolant temperature can be controlled during the training startups, thereby minimizing the discharge of reactor water to the radioactive waste disposal system.

APPLICABLE SAFETY ANALYSES

The Emergency Core Cooling System (ECCS) is designed to provide core cooling following a loss of coolant accident (LOCA). The low pressure coolant injection (LPCI) mode of the RHR System is one of the ECCS subsystems assumed to function during a LOCA. With reactor power ≤ 1% RTP (equivalent to all OPERABLE intermediate range monitor (IRM) channels ≤ 25/40 divisions of full scale on Range 7) and average reactor coolant temperature < 200°F, the stored energy in the reactor core and coolant system is very low, and a reduced complement of ECCS can provide the required core cooling, thereby allowing operation with one RHR subsystem in the shutdown cooling mode (Ref. 1).

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

(continued)

1

BASES

APPLICABLE SAFETY ANALYSES (continued)

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. Training startups may be performed while in MODE 2 with no RHR subsystems aligned in the shutdown cooling mode and, therefore, without meeting this Special Operations LCO or its ACTIONS. However, to minimize the discharge of reactor coolant to the radioactive waste disposal system, performance of the training startups may be accomplished with one RHR subsystem aligned in the shutdown cooling mode to maintain average reactor coolant temperature < 200°F. Under these conditions, the THERMAL POWER must be maintained ≤ 1% RTP (equivalent to all OPERABLE IRM channels ≤ 25/40 divisions of full scale on Range 7) and the average reactor coolant temperature must be < 200°F. This Special Operations LCO then allows changing the LPCI OPERABILITY requirements. In addition to the requirements of this LCO, the normally required MODE 2 applicable LCOs must also be met.

APPLICABILITY

Training startups while in MODE 2 may be performed with one RHR subsystem aligned in the shutdown cooling mode to control the reactor coolant temperature. Additional requirements during these tests to restrict the reactor power and reactor coolant temperature provide protection against potential conditions that could require operation of both RHR subsystems in the LPCI mode of operation. Operations in all other MODES are unaffected by this LCO.

ACTIONS

A.1

With one or more of the requirements of this LCO not met, (i.e., any OPERABLE IRM channel > 25/40 divisions of full scale on Range 7, or average reactor coolant temperature ≥ 200°F) the reactor may be in a condition that requires the full complement of ECCS subsystems and the reactor mode switch must be immediately placed in the shutdown position. This results in a condition that does not require all RHR

(continued)

BASES

ACTIONS

A.1 (continued)

subsystems to be OPERABLE in the LPCI mode of operation. This action may restore compliance with the requirements of this Special Operations LCO or may result in placing the plant in either MODE 3 or MODE 4.

SURVEILLANCE REQUIREMENTS

SR 3.10.10.1 and SR 3.10.10.2

Periodic verification that the THERMAL POWER and reactor coolant temperature limits of this Special Operations LCO are satisfied will ensure that the stored energy in the reactor core and reactor coolant are sufficiently low to preclude the need for all RHR subsystems to be aligned in the LPCI mode of operation. The 1 hour Frequency provides frequent checks of these LCO requirements during the training startup.

REFERENCES

1. FSAR, Section [6.3.2].

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1433, REVISION 1
ISTS BASES: 3.10.10 - TRAINING STARTUPS

1. This Bases section has been deleted because the associated Specification has been deleted.

ADMINISTRATIVE CHANGES
("A.x" Labeled Comments/Discussions)

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change involves reformatting, renumbering, and rewording the existing Technical Specifications. The reformatting, renumbering, and rewording process involves no technical changes to the existing Technical Specifications. As such, this change is administrative in nature and does not impact initiators of analyzed events or assumed mitigation of accident or transient events. Therefore, this change does 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 does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change will not impose any new or eliminate any old requirements. Thus, this change 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?

   The proposed change will not reduce a margin of safety because it has no impact on any safety analyses assumptions. This change is administrative in nature. Therefore, the change does not involve a significant reduction in a margin of safety.

GENERIC NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: SECTION 3.10 - SPECIAL OPERATIONS

TECHNICAL CHANGES - MORE RESTRICTIVE
("M.x" Labeled Comments/Discussions)

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change provides more stringent requirements for operation of the facility. These more stringent requirements do not result in operation that will increase the probability of initiating an analyzed event and do not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements continue to ensure process variables, structures, systems, and components are maintained consistent with the safety analyses and licensing basis. Therefore, this change does 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 does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in the methods governing normal plant operation. The proposed change does impose different requirements. However, these changes are consistent with the assumptions in the safety analyses and licensing basis. Thus, this change 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?

   The imposition of more restrictive requirements either has no impact on or increases the margin of plant safety. As provided in the discussion of the change, each change in this category is by definition, providing additional restrictions to enhance plant safety. The change maintains requirements within the safety analyses and licensing basis. Therefore, this change does not involve a significant reduction in a margin of safety.

"GENERIC" LESS RESTRICTIVE CHANGES:
RELOCATING DETAILS TO TECHNICAL SPECIFICATION BASES, UFSAR, TRM, OR OTHER PLANT CONTROLLED DOCUMENTS
("LA.x" Labeled Comments/Discussions)

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relocates certain details from the Technical Specifications to the Bases, UFSAR, TRM, or other plant controlled documents. The Bases, UFSAR, TRM, and other plant controlled documents containing the relocated information will be maintained in accordance with 10 CFR 50.59. In addition to 10 CFR 50.59 provisions, the Technical Specification Bases are subject to the change control provisions in the Administrative Controls Chapter of the ITS. The UFSAR is subject to the change control provisions of 10 CFR 50.71(e), and the plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which endorse applicable regulations and standards. Since any changes to the Bases, UFSAR, TRM, or other plant controlled documents will be evaluated per the requirements of the Bases Control Program in Chapter 5.0 of the ITS or 10 CFR 50.59, no increase (significant or insignificant) in the probability or consequences of an accident previously evaluated will be allowed. Therefore, this change does 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 does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The proposed change will not impose or eliminate any requirements, and adequate control of the information will be maintained. Thus, this change 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?

   The proposed change will not reduce a margin of safety because it has no impact on any safety analysis assumptions. In addition, the details to be transposed from the Technical Specifications to the Bases, UFSAR, TRM, or other plant controlled

"GENERIC" LESS RESTRICTIVE CHANGES:
RELOCATING DETAILS TO TECHNICAL SPECIFICATION BASES, UFSAR, TRM, OR OTHER PLANT CONTROLLED DOCUMENTS
("LA.x" Labeled Comments/Discussions)

3. (continued)

documents are the same as the existing Technical Specifications. Since any future changes to these details in the Bases, UFSAR, TRM, or other plant controlled documents will be evaluated per the requirements of 10 CFR 50.59, no reduction (significant or insignificant) in a margin of safety will be allowed. Based on 10 CFR 50.92, the existing requirement for NRC review and approval of revisions, to these details proposed for relocation, does not have a specific margin of safety upon which to evaluate. However, since the proposed change is consistent with the BWR ISTS, NUREG-1433, Rev. 1, approved by the NRC Staff, revising the Technical Specifications to reflect the approved level of detail ensures no significant reduction in the margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.10.1 - REACTOR MODE SWITCH INTERLOCK TESTING

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The position of the reactor mode switch is not assumed to be an initiator of any analyzed event. The position of the reactor mode switch (and resulting interlock function) is provided to preclude an inadvertent criticality which could potentially result in fuel damage. As a result, the role of the reactor mode switch interlocks is in precluding an inadvertent criticality and thereby limiting consequences. To allow testing of instrumentation associated with the reactor mode switch interlock functions, compensatory measures are provided for assuring all control rods remain fully inserted in core cells that contain one or more fuel assemblies and no other CORE ALTERATIONS are in progress. These compensatory measures ensure there are no credible mechanisms for an inadvertent criticality. 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 does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce any credible mechanisms for an inadvertent criticality and does not require physical modification to the plant.

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

   The proposed change does not involve a significant reduction in a margin of safety since compensatory measures have been added to ensure no credible mechanisms for an inadvertent criticality exist with the reactor mode switch in other than the shutdown position. Additionally, the proposed change provides added assurance that the refueling mode switch interlocks can be demonstrated to be OPERABLE.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.10.2 - SINGLE CONTROL ROD WITHDRAWAL — HOT SHUTDOWN

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The reactor mode switch is not assumed in the initiation of any analyzed event. This requirement was specified in the Technical Specifications to ensure that the reactor mode switch was not inadvertently moved from the Refuel position resulting in an unauthorized MODE change. However, adequate administrative controls exist as a result of ITS Table 1.1-1, MODES, and the requirements of ITS 3.10.2 to ensure the reactor mode switch is maintained in the Refuel position without the explicit requirement to "lock" the reactor mode switch in position. A reactor mode switch position other than Refuel would result in exiting this special test exception; with the associated Technical Specification compliance requirements of the given MODE (more than likely MODE 3 with the reactor mode switch position in Shutdown). In addition, this is a special test exception, and it is not normal to have the reactor mode switch in Refuel. Locking the reactor mode switch in Refuel would require additional actions by the operators to return it to the normal position (Shutdown). As a result, accident consequences are unaffected by this change. 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 possibility of a new or different kind of accident from any accident previously evaluated is not created because the proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant.

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

   The requirement to "lock" the reactor mode switch in the Refuel position was specified in the Technical Specifications to ensure that the reactor mode switch was not inadvertently moved from the required position resulting in an unauthorized MODE change. However, adequate administrative controls exist as a result of ITS Table 1.1-1, MODES, and the requirements of ITS 3.10.2 to ensure the reactor mode switch is maintained in the required position without the explicit requirement to "lock" the reactor mode switch in Refuel. A reactor mode switch position other that Refuel would result in exiting this special test exception; with the associated Technical

L.1 CHANGE

3. (continued)

Specification compliance requirements of the given MODE (more than likely MODE 3 with the reactor mode switch position in Shutdown). Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.10.3 - SINGLE CONTROL ROD WITHDRAWAL — COLD SHUTDOWN

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The reactor mode switch is not assumed in the initiation of any analyzed event. The requirement for the reactor mode switch to be OPERABLE is not necessary to be explicitly stated in the Technical Specifications since reactor mode switch OPERABILITY is already included as part of the OPERABILITY of various interlocks, trip functions and control rod blocks. The requirement to "lock" the reactor mode switch in the Refuel position was specified in the Technical Specifications to ensure that the reactor mode switch was not inadvertently moved from the Refuel position resulting in an unauthorized MODE change. However, adequate administrative controls exist as a result of ITS Table 1.1-1, MODES, and the requirements of ITS 3.10.3 to ensure the reactor mode switch is maintained in the Refuel position without the explicit requirement to "lock" the reactor mode switch in a particular position. A reactor mode switch position other than Refuel would result in exiting this special test exception; with the associated Technical Specification compliance requirements of the given MODE (more than likely MODE 4 with the reactor mode switch position in Shutdown). In addition, this is a special test exception, and it is not normal to have the reactor mode switch in Refuel while in MODE 4. Locking the reactor mode switch in Refuel would require additional actions by the operators to return it to the normal position (Shutdown). As a result, accident consequences are unaffected by this change. 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 possibility of a new or different kind of accident from any accident previously evaluated is not created because the proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant.

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

   The requirement for the reactor mode switch to be OPERABLE is not necessary to be explicitly stated in the Technical Specifications since reactor mode switch OPERABILITY is already included as part of the OPERABILITY of various interlocks, trip functions and control rod blocks. The requirement to "lock" the

L.1 CHANGE

3. (continued)

reactor mode switch in the Refuel position is adequately controlled by ITS Table 1.1-1, MODES, and the requirements of ITS 3.10.3. A reactor mode switch position other than Refuel would result in exiting this special test exception; with the associated Technical Specification compliance requirements of the given MODE (more than likely MODE 4 with the reactor mode switch position in Shutdown). Therefore, this change does not involve a significant reduction in a margin of safety.

L.2 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed LCO requirements when removing a control rod and/or control rod drive mechanism are not assumed to be initiators of any analyzed event. The role of these requirements is in the prevention and mitigation of an inadvertent criticality, thereby limiting consequences. The proposed alternate requirements provide the ability to scram the withdrawn control rod in the event of an inadvertent criticality. Additionally, consequences of an inadvertent criticality will not be increased since in this condition the required SHUTDOWN MARGIN and the one-rod-out interlock (or a rod block signal) ensures an inadvertent criticality is precluded. Therefore, this proposed 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 does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change introduces no new mode of plant operation nor does it require physical modification to the plant.

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

   Any reduction in a margin of safety will be insignificant since the proposed alternative requirements ensure that capabilities exist to mitigate the consequences of inadvertent criticality. Additionally, during removal of a control rod and/or control rod drive mechanism, protection against inadvertent criticality is provided by the one-rod-out interlock requirements of ITS LCO 3.9.2 (or a rod block signal) and SHUTDOWN MARGIN requirements of ITS 3.1.1. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

L.3 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed LCO requirements when removing a control rod and/or control rod drive mechanism are not assumed to be initiators of any analyzed event. The role of these requirements is in the prevention and mitigation of inadvertent criticality, thereby limiting consequences. The proposed change still provides assurance the LCO requirements are maintained when removing a control rod and/or control rod drive mechanism. Therefore, no significant increase in the probability or consequences of an accident previously evaluated is involved.

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

   The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change introduces no new mode of plant operation nor does it require physical modification to the plant.

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

   The proposed change does not involve a significant reduction in a margin of safety since the 24 hour Frequencies have been shown, based on operating experience, to be adequate for assuring the LCO requirements are maintained. Additionally, the requirements of both proposed SR 3.0.1 (CTS 4.0.A), which require SRs to be met in the MODES or other specified conditions in the Applicability, and the ACTION requirements of ITS 3.10.3, which require immediate suspension of the control rod withdrawal and/or control rod drive mechanism removal, provide assurance the LCO requirements are met (in this case, Surveillance Requirements satisfied within the normal periodic Frequency prior to starting the activity) prior to the start of the control rod and/or control rod drive mechanism removal.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.10.4 - SINGLE CONTROL ROD DRIVE REMOVAL — REFUELING

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The reactor mode switch is not assumed in the initiation of any analyzed event. The requirement for the reactor mode switch to be OPERABLE is not necessary to be explicitly stated in the Technical Specifications since reactor mode switch OPERABILITY is already included as part of the OPERABILITY of various interlocks, trip functions and control rod blocks. The requirement to "lock" the reactor mode switch in the required position was specified in the Technical Specifications to ensure that the reactor mode switch was not inadvertently moved from the Shutdown or Refuel position resulting in an unauthorized MODE change. However, adequate administrative controls exist as a result of ITS Table 1.1-1, MODES, and the requirements of proposed LCO 3.0.1 to ensure the reactor mode switch is maintained in the Shutdown or Refuel position without the explicit requirement to "lock" the reactor mode switch in position. Reactor mode switch positions other than Refuel or Shutdown result in the unit entering some other MODE; with the associated Technical Specification compliance requirements of that MODE and of proposed LCO 3.0.1. As a result, the accident consequences are unaffected by this change. 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 possibility of a new or different kind of accident from any accident previously evaluated is not created because the proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant.

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

   The requirement for the reactor mode switch to be OPERABLE is not necessary to be explicitly stated in the Technical Specifications since reactor mode switch OPERABILITY is already included as part of the OPERABILITY of various interlocks, trip functions and control rod blocks. The requirement to "lock" the reactor mode switch in the Shutdown or Refuel position was specified in the Technical

L.1 CHANGE

3. (continued)

Specifications to ensure that the reactor mode switch was not inadvertently moved from the Shutdown or Refuel position resulting in an unauthorized MODE change. However, adequate administrative controls exist as a result of ITS Table 1.1-1, MODES, and the requirements of proposed LCO 3.0.1 to ensure the reactor mode switch is maintained in the Shutdown or Refuel position without the explicit requirement to "lock" the reactor mode switch in Shutdown or Refuel. Reactor mode switch positions other that Refuel or Shutdown result in the unit entering some other MODE; with the associated Technical Specification compliance requirements of that MODE and of proposed LCO 3.0.1. Therefore, this change does not involve a significant reduction in a margin of safety.

L.2 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed LCO requirements when removing a control rod and/or control rod drive mechanism are not assumed to be initiators of any analyzed event. The role of these requirements is in the prevention and mitigation of inadvertent criticality, thereby limiting consequences. The proposed change still provides assurance the LCO requirements are maintained when removing a control rod and/or control rod drive mechanism. Therefore, no significant increase in the probability or consequences of an accident previously evaluated is involved.

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

   The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce a new mode of plant operation and does not require physical modification to the plant.

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

   The proposed change does not involve a significant reduction in a margin of safety since the 24 hour Frequencies have been shown, based on operating experience, to be adequate for assuring the LCO requirements are maintained. Additionally, the requirements of both proposed SR 3.0.1 (CTS 4.0.A), which require SRs to be met in the MODES or other specified conditions in the Applicability, and the ACTION requirements of ITS 3.10.4, which require immediate suspension of the control rod withdrawal and/or control rod drive mechanism removal, provide assurance the LCO requirements are met (in this case, Surveillance Requirements satisfied within the normal periodic Frequency prior to starting the activity) prior to the start of the control rod and/or control rod drive mechanism removal.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.10.5 - MULTIPLE CONTROL ROD WITHDRAWAL — REFUELING

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The reactor mode switch is not assumed in the initiation of any analyzed event. The requirement for the reactor mode switch to be OPERABLE is not necessary to be explicitly stated in the Technical Specifications since reactor mode switch OPERABILITY is already included as part of the OPERABILITY of various interlocks, trip functions and control rod blocks. The requirement to "lock" the reactor mode switch in the required position was specified in the Technical Specifications to ensure that the reactor mode switch was not inadvertently moved from the Shutdown or Refuel position resulting in an unauthorized MODE change. However, adequate administrative controls exist as a result of ITS Table 1.1-1, MODES, and the requirements of proposed LCO 3.0.1 to ensure the reactor mode switch is maintained in the Shutdown or Refuel position without the explicit requirement to "lock" the reactor mode switch in position. Reactor mode switch positions other than Refuel or Shutdown result in the unit entering some other MODE; with the associated Technical Specification compliance requirements of that MODE and of proposed LCO 3.0.1. As a result, the accident consequences are unaffected by this change. 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 possibility of a new or different kind of accident from any accident previously evaluated is not created because the proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant.

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

   The requirement for the reactor mode switch to be OPERABLE is not necessary to be explicitly stated in the Technical Specifications since reactor mode switch OPERABILITY is already included as part of the OPERABILITY of various interlocks, trip functions and control rod blocks. The requirement to "lock" the reactor mode switch in the Shutdown or Refuel position was specified in the Technical Specifications to ensure that the reactor mode switch was not inadvertently moved from the Shutdown or Refuel position resulting in an unauthorized MODE change. However, adequate administrative controls exist as a result of ITS Table 1.1-1,

L.1 CHANGE

3. (continued)

MODES, and the requirements of proposed LCO 3.0.1 to ensure the reactor mode switch is maintained in the Shutdown or Refuel position without the explicit requirement to "lock" the reactor mode switch in Shutdown or Refuel. Reactor mode switch positions other than Refuel or Shutdown result in the unit entering some other MODE; with the associated Technical Specification compliance requirements of that MODE and of proposed LCO 3.0.1. Therefore, this change does not involve a significant reduction in a margin of safety.

L.2 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed LCO requirements when removing control rods and/or control rod drive mechanisms are not assumed to be initiators of any analyzed event. The role of these requirements is in the prevention and mitigation of an inadvertent criticality, thereby limiting consequences. The proposed change still provides assurance the LCO requirements are maintained when removing control rods and/or control rod drive mechanisms. Therefore, no significant increase in the probability or consequences of an accident previously evaluated is involved.

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

   The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce a new mode of plant operation and does not require physical modification to the plant.

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

   The proposed change does not involve a significant reduction in a margin of safety since the 24 hour Frequencies have been shown, based on operating experience, to be adequate for assuring the LCO requirements are maintained. Additionally, the requirements of both proposed SR 3.0.1 (CTS 4.0.A), which require SRs to be met in the MODES or other specified conditions in the Applicability, and the ACTION requirements of ITS 3.10.5, which require immediate suspension of the control rod withdrawal and/or control rod drive mechanism removal, provide assurance the LCO requirements are met (in this case, Surveillance Requirements satisfied within the normal periodic Frequency prior to starting the activity) prior to the start of the control rod and/or control rod drive mechanism removal.

L.3 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The requirement to perform a CHANNEL FUNCTIONAL TEST to verify the restoration of the one-rod-out interlock is not assumed in the initiation of any analyzed event. This requirement was specified in the Technical Specifications to ensure the OPERABILITY of the one-rod-out interlock was positively verified following restoration. The proposed deletion of this explicit requirement is acceptable since proposed SR 3.0.1 requires the appropriate SRs to be performed to demonstrate OPERABILITY after restoration of a component that caused the SR to be failed. In this case, proposed SR 3.0.1 would require proposed SR 3.9.2.2 to be performed, which requires a CHANNEL FUNCTIONAL TEST on the one-rod-out interlock be performed. As a result, the accident consequences are unaffected by this change. 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 possibility of a new or different kind of accident from any accident previously evaluated is not created because the proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant.

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

   The proposed deletion of the explicit requirement to perform a CHANNEL FUNCTIONAL TEST on the one-rod-out interlock following restoration is acceptable since proposed SR 3.0.1 requires the appropriate SRs to be performed to demonstrate OPERABILITY after restoration of a component that caused the SR to be failed. In this case, proposed SR 3.0.1 would require proposed SR 3.9.2.2 to be performed, which requires a CHANNEL FUNCTIONAL TEST of the one-rod-out interlock be performed. As a result, the existing requirement to perform a CHANNEL FUNCTIONAL TEST on the one-rod-out interlock following restoration is maintained. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.10.6 - CONTROL ROD TESTING — OPERATING

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   This change permits control rod testing with sequences which deviate from the prescribed sequences of ITS 3.1.6, while in MODES 1 and 2, by imposing certain administrative controls. The proposed change does not increase the probability of an accident. The administrative controls, which require a reanalysis of the CRDA for the special sequences, ensure the control rod withdrawal sequence analyzed for the test is followed. This is done by either changing the analyzed rod position sequence in the RWM or having a second qualified person verify conformance to the required control rod sequence. These administrative controls also ensure that the proposed change will not increase the consequences of an accident by assuring that no deviations from the required control rod sequence pattern occur. These sequences effectively limit the potential amount and rate of reactivity increase that could occur during a CRDA while the test is in progress. This proposed Special Operations Technical Specification (ITS 3.10.6) provides the necessary administrative controls to allow the deviations from the prescribed sequences in ITS 3.1.6 while assuring consequences of a CRDA during the testing are maintained within the bounds of the safety analysis. 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 will not create the possibility of an accident. This change permits control rod testing, with sequences which deviate from the prescribed sequence of ITS 3.1.6, while in MODES 1 and 2, by imposing certain administrative controls. These administrative controls ensure assumptions of the analyzed CRDA for the special control rod withdrawal sequence are maintained. The administrative controls require either to change the analyzed rod position sequence in the RWM to the special control rod withdrawal sequence or to ensure the special control rod withdrawal sequence is verified by a second qualified person. By abiding by either of these two provisions no new credible mechanisms for violating the bounds of the CRDA are introduced. Also, this change will not physically alter 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.

L.1 CHANGE (continued)

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

This change permits control rod testing with sequences which deviate from the prescribed sequences of ITS 3.1.6, while in MODES 1 and 2, by imposing certain administrative controls. The margin of safety will not be reduced because compensatory measures have been added to ensure no credible mechanisms for violating the bounds set forth in the CRDA are introduced. The compensatory measures are to ensue that the control rod withdrawal sequence assumed in the CRDA are not violated. This is done by requiring a CDA analysis to demonstrate that the special sequence will not result in unacceptable consequences, should a CRDA occur during the testing, and assuring the special sequence is adhered to by either changing the analyzed rod position sequence in the RWM or having a second qualified person to verify the sequence. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.10.7 - SDM TEST — REFUELING

L.1 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed surveillance requirements are not assumed to be initiators of any analyzed event. The role of these requirements is in mitigating a control rod drop accident, thereby limiting consequences of such an event. The proposed change still provides assurance the necessary equipment is OPERABLE and other controls of the LCO are met. Therefore, no significant increase in the probability or consequences of an accident previously evaluated is involved.

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

   The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed change does not introduce a new mode of plant operation and does not require physical modification to the plant.

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

   The proposed change does not involve a significant reduction in a margin of safety since the 12 hour Frequency and the Frequencies specified in the applicable Surveillance Requirements have been shown to be adequate for assuring the necessary equipment OPERABILITY and other controls of the LCO are met. Additionally, the requirements of both proposed SR 3.0.1 (CTS 4.0.A), which require SRs to be met in the MODES or other specified conditions in the Applicability, and the ACTION requirements of ITS 3.10.7, which require immediate suspension of the SDM test, provide assurance the requirements are met (in this case, Surveillance Requirements satisfied within the normal periodic Surveillance Frequency prior to starting the SDM test) prior to the start of the testing.

NO SIGNIFICANT HAZARDS CONSIDERATION
CTS: 3/4.12.A - PRIMARY CONTAINMENT INTEGRITY

There were no plant specific less restrictive changes identified for this Specification.

NO SIGNIFICANT HAZARDS CONSIDERATION
CTS: 3/4.12.C - INSERVICE LEAK AND HYDROSTATIC TESTING OPERATION

There were no plant specific less restrictive changes identified for this Specification.

ENVIRONMENTAL ASSESSMENT
ITS: SECTION 3.10 - SPECIAL OPERATIONS

In accordance with the criteria set forth in 10 CFR 50.21, ComEd has evaluated this proposed Technical Specification change for identification of licensing and regulatory actions requiring environmental assessment, determined it meets the criteria for a categorical exclusion set forth in 10 CFR 51.22(c)(9) and as such, has determined that no irreversible consequences exist in accordance with 10 CFR 50.92(b). This determination is based on the fact that this change is being proposed as an amendment to a license issued pursuant to 10 CFR which changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or which changes an inspection or a surveillance requirement, and the amendment meets the following specific criteria:

1. The amendment involves no significant hazards consideration.

   As demonstrated in the No Significant Hazards Consideration, this proposed amendment does not involve any significant hazards consideration.

2. There is no significant change in the type or significant increase in the amounts of any effluents that may be released offsite.

   The proposed change will not result in changes in the operation or configuration of the facility. There will be no change in the level of controls or methodology used for processing of radioactive effluents or handling of solid radioactive waste, nor will the proposal result in any change in the normal radiation levels within the plant. Therefore, there will be no change in the types or significant increase in the amounts of any effluents released offsite resulting from this change.

3. There is no significant increase in individual or cumulative occupational radiation exposure.

   The proposed change will not result in changes in the operation or configuration of the facility which impact radiation exposure. There will be no change in the level of controls or methodology used for processing of radioactive effluents or handling of solid radioactive waste, nor will the proposal result in any change in the normal radiation levels within the plant. Therefore, there will be no increase in individual or cumulative occupational radiation exposure resulting from this change.

Therefore, based upon the above evaluation, ComEd has concluded that no irreversible consequences exist with the proposed change.