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## Technical Specifications Task Force

### Improved Standard Technical Specifications Change Traveler

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**Provide an Alternative to the LCO 3.0.3 One-Hour Preparation Time**NUREGs Affected: ☒ 1430 ☒ 1431 ☒ 1432 ☒ 1433 ☒ 1434 ☒ 2194

Classification: 1) Technical Change

Recommended for CLIIP?: Yes

Correction or Improvement: Improvement

NRC Fee Status: Not Exempt

Benefit: Avoids a Plant Shutdown

Changes Marked on ISTS Rev 5.0

PWROG RISD &amp; PA (if applicable): PA-LSC-1708 RS-2019-005

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See attached.

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### Revision History

**OG Revision 0****Revision Status: Closed**

Revision Proposed by: PWROG

Revision Description:  
Original Issue

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**Owners Group Review Information**

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Owners Group Comments  
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Owners Group Resolution: Approved Date: 19-Mar-21

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(No Comments)

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**TSTF Revision 1****Revision Status: Active**

Revision Proposed by: TSTF

Revision Description:

The draft traveler was renamed and revised based on NRC comments.

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30-Nov-21

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**TSTF Revision 1****Revision Status: Active**

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**Affected Technical Specifications**

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LCO 3.0.3 LCO Applicability

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LCO 3.0.3 Bases LCO Applicability

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30-Nov-21

## 1. SUMMARY DESCRIPTION

The proposed change revises the Limiting Condition for Operation (LCO) 3.0.3 one-hour period provided to prepare for a shutdown by adding an alternative of 24-hours in some circumstances to allow additional time for plant shutdown preparations, to perform repairs, or to request relief from the NRC. The proposed change affects the Standard Technical Specifications (STS) in NUREG-1430, NUREG-1431, NUREG-1432, NUREG-1433, NUREG-1434, and NUREG-2194<sup>1</sup>.

## 2. DETAILED DESCRIPTION

### 2.1. Current Technical Specifications Requirements

In the Pressurized Water Reactor (PWR) STS (NUREG-1430, NUREG-1431, NUREG-1432, and NUREG-2194), LCO 3.0.3 states:

LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:

- a. MODE 3 within 7 hours,
- b. MODE 4 within 13 hours, and
- c. MODE 5 within 37 hours.

Exceptions to this Specification are stated in the individual Specifications.

Where corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.

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<sup>1</sup> NUREG-1430 provides the STS for Babcock & Wilcox plant designs. NUREG-1431 provides the STS for Westinghouse plant designs. NUREG-1432 provides the STS for Combustion Engineering plant designs. NUREG-1433 provides the STS for BWR/4 plant designs, but is also representative of the BWR/2, BWR/3, and, in this case, BWR/5 designs. NUREG-1434 provides the STS for the BWR/6 plant design, and is representative, in some cases, of the BWR/5 plant design. NUREG-2194 provides the STS for Westinghouse Advanced Passive (AP) 1000 plant designs.

In the Boiling Water Reactor (BWR) STS (NUREG-1433 and NUREG-1434), the LCO 3.0.3 requirements reflect the differences between the PWR and BWR Mode definitions, but is otherwise the same:

...place the unit, as applicable, in:

- a. MODE 2 within  $[7]^2$  hours,
- b. MODE 3 within 13 hours, and
- c. MODE 4 within 37 hours.

...

LCO 3.0.3 is only applicable in MODES 1, 2, and 3.

## **2.2. Reason for the Proposed Change**

The current one-hour preparation time before initiating a plant shutdown in LCO 3.0.3 provides insufficient time for a licensee to correct the initiating condition, to request relief from the NRC to avoid a shutdown that is not warranted, or to perform the typical preparations for a plant shutdown. Historical information has shown that about half of the plant shutdowns initiated under LCO 3.0.3 could be avoided if licensees are given additional time to resolve the condition or request relief from the NRC.

While reactor operators are trained to perform a rapid plant shutdown, moving from full power to cold shutdown is a major plant evolution that exercises an array of plant equipment and procedures. Most TS-required equipment is in standby, and its inoperability does not threaten stable plant operation. Therefore, maneuvering the plant through a rapid shutdown transient may be an unwarranted risk if the condition can be resolved or appropriate regulatory relief may be requested and obtained in a reasonable period, or failing those options, for the normal preparations for an orderly shutdown to be taken.

The existing LCO 3.0.3 requires a rapid plant shutdown regardless of the risk significance of the plant condition. As stated in the NRC's "PRA Policy Statement " (60 FR 42622, August 16, 1995), it is the Commission's policy that probabilistic risk assessment (PRA) and associated analyses should be used in regulatory matters, where practical within the bounds of the state-of-the art, to reduce unnecessary conservatism associated with current regulatory requirements. The proposed change is consistent with that goal.

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<sup>2</sup> The NUREG-1433 TS include a Reviewer's Note that states that a longer time to reach MODE 2 may be justified on a plant-specific basis.

### 2.3. Description of the Proposed Change

The proposed change provides an alternative to the current one-hour preparation period before initiating a shutdown under LCO 3.0.3. If entry into LCO 3.0.3 was not planned and risk is assessed and managed, 24 hours is provided to prepare for the shutdown. The proposed change has no effect on the TS requirements or plant conditions that may result in entering LCO 3.0.3, or in the times permitted to enter lower Modes once a shutdown is initiated under LCO 3.0.3.

The following changes are proposed to LCO 3.0.3 (additions are in italics, deletions are struck through):

#### PWR TS

LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, ~~the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action~~ *action* shall be initiated *to place the unit in a MODE or other specified condition in which the LCO is not applicable* within: ~~1 hour to place the unit, as applicable, in:~~

- a. *1 hour; or*
- b. *24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.*

*At the end of the 1 hour or 24 hour period:*

*Be in MODE 3 within 67 hours,*

*Be in MODE 4 within 1243 hours, and*

*Be in MODE 5 within 3637 hours.*

Exceptions to this Specification are stated in the individual Specifications.

~~Where~~ *If* corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, *then* completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.

BWR TS

LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, ~~the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action~~ *action* shall be initiated to place the unit in a MODE or other specified condition in which the LCO is not applicable within: ~~1 hour to place the unit, as applicable, in:~~

- a. 1 hour; or*
- b. 24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.*

*At the end of the 1 hour or 24 hour period:*

*Be in MODE 2 within [67] hours,*

*Be in MODE 3 within 1243 hours, and*

*Be in MODE 4 within 3637 hours.*

Exceptions to this Specification are stated in the individual Specifications.

~~Where~~ *If* corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, ~~then~~ completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, and 3.

The TS Bases are revised to reflect these changes.

The NUREG-2194 LCO 3.0.3 Bases are also revised to incorporate changes approved by the NRC in TSTF-529, "Clarify Use and Application Rules," in order to make the TS Bases consistent between the STS NUREGs. The NRC approved TSTF-529, Revision 4, on April 21, 2016, for NUREG-1430 through NUREG-1434 (see NRC Agencywide Documents Access and Management System (ADAMS) Accession No. ML16060A441.) The changes to the NUREG-2194 LCO 3.0.3 Bases are:

- The LCO 3.0.3 Bases uses the term "reaching" when describing a transition to a lower MODE. The term "entering" is more accurate and is the commonly used term in the TS for MODE transitions. In seven locations in the LCO 3.0.3 Bases, the term "reaching" a MODE is replaced with the term "entering" a MODE. These changes do not represent any change in intent, but are made for consistency within the ISTS.

- The LCO 3.0.3 Bases list the conditions under which a unit shutdown required in accordance with LCO 3.0.3 may be terminated and LCO 3.0.3 exited. This list is incomplete because it does not acknowledge that a unit shutdown may be terminated and LCO 3.0.3 exited if the LCO is no longer applicable (i.e., the LCO that was not met which led to entry into LCO 3.0.3). The proposed change adds to the list a new paragraph b that states, "The LCO is no longer applicable," and the subsequent list items are renumbered. This change does not represent any change in intent, but is made for consistency within the ISTS

Title 10 of the Code of Federal Regulations (10 CFR), Part 50.36, states, "A summary statement of the bases or reasons for such specifications, other than those covering administrative controls, shall also be included in the application, but shall not become part of the technical specifications." A licensee may make changes to the TS Bases without prior NRC review and approval in accordance with the Technical Specifications Bases Control Program. The proposed TS Bases changes are consistent with the proposed TS changes and provide the purpose for each requirement in the specification consistent with the Commission's Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 2, 1993 (58 FR 39132). Therefore, the Bases changes are provided for information and approval of the Bases is not requested.

A model application is attached. The model may be used by licensees desiring to adopt the traveler following NRC approval.

### **3. TECHNICAL EVALUATION**

The proposed change expands the LCO 3.0.3 time to prepare for a shutdown from the current, fixed one-hour period to include an alternative 24-hour preparation period if the entry into LCO 3.0.3 was unplanned and if risk is assessed and managed. The proposed change has no effect on the TS requirements or plant conditions that may result in entering LCO 3.0.3, or in the times permitted to enter lower Modes once a shutdown is initiated under LCO 3.0.3. The current LCO 3.0.3 requires a rapid plant shutdown under all circumstances, regardless of the risk associated with the condition that resulted in entering LCO 3.0.3. The required risk assessment and risk management actions, performed in accordance with 10 CFR 50.65(a)(4), ensure that the use of the extended preparation period does not increase plant risk.

#### **3.1. Justification**

##### **3.1.1. The Proposed Change is Consistent with the Regulations**

Title 10 of the Code of Federal Regulations (10 CFR), Part 50, paragraph 50.36(c)(2), "Limiting Conditions for Operation," states, "When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met." LCO 3.0.3 satisfies this regulation by providing a requirement to shut down the reactor if an LCO is not met and the TS does not provide any other remedial action.

Generic Letter 80-30 mandated all licensees revise the equivalent to LCO 3.0.3 to require PWRs to be in Hot Standby within 1 hour and BWRs to be in Hot Shutdown within 6 hours. However,

the 1980 versions of the Standard Technical Specifications provided one hour to prepare before initiating a shutdown. The purpose of the one-hour allowance was not discussed in the STS Bases, but Generic Letter (GL) 87-09, "Sections 3.0 and 4.0 of the Standard Technical Specifications (STS) on the Applicability of Limiting Conditions for Operation and Surveillance Requirements," revised the Bases to state, "One hour is allowed to prepare for an orderly shutdown before initiating a change in plant operation. This time permits the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid." All operating plants have adopted the one hour time to prepare in their equivalent of LCO 3.0.3. 10 CFR 50.36(c)(2) does not specify a timeframe for a licensee to shut down the reactor if an LCO is not met. The NRC has found it consistent with 10 CFR 50.36 for plant TS to contain a delay time before initiating a plant shutdown. Since the length of the delay time is not specified in the regulations, the proposed 24 hour period as an alternative to the existing one-hour period to prepare for a plant shutdown is also consistent with 10 CFR 50.36(c)(2).

### **3.1.2. The Proposed Change Improves Plant Safety**

Nuclear plant operators are trained to perform a rapid plant shutdown and practice such shutdowns in plant simulators, but are rarely called on to do so in the plant. Most TS-required plant shutdowns are preceded by an Action that provides time to restore compliance and TS-required immediate plant shutdowns are rare. A review of ten years of Licensee Event Reports (LERs) (2010 - 2020) identified 52 immediate plant shutdowns that were required by the TS over approximately 1000 reactor-years of operation (i.e., approximately one per 250 reactor-years). As a result, immediate plant shutdowns are considered to be infrequent evolutions. Licensees typically implement additional administrative requirements to minimize the risk from infrequent evolutions, but the abbreviated time to initiate a shutdown provided by LCO 3.0.3 may not provide time to implement these precautions.

A plant shutdown under LCO 3.0.3 is also time-critical in that a major plant evolution must be initiated within one hour. A TS-required immediate plant shutdown includes many activities, such as stopping maintenance or testing and restoring systems, or planning for a shutdown with unavailable systems. Human performance studies indicate that time-critical actions are more error prone and providing additional time to initiate a plant shutdown under LCO 3.0.3 could relieve time pressure and reduce the risk of human error.

The NRC's Notice of Enforcement Discretion guidance (NRC Enforcement Manual, Appendix F, "Notices of Enforcement Discretion,") recognizes that a plant shutdown is not always the safest course of action:

The NRC has historically recognized that the two safest modes for operating a nuclear power plant are either Mode 5 (shut down) or Mode 1 (operating at power). Transitions between these two modes may introduce situations or configurations that involve an increase in risk. The NRC expects its licensees to comply with all applicable requirements (i.e., regulations, license conditions, etc.). However, circumstances may arise at an operating NPP where compliance with a TS LCO or a license condition would result in an unnecessary transient without a corresponding health and safety benefit...



In the ten-year period of 2010 - 2020, a comparison of Emergency Notification System (ENS) data to LER data determined that only about half of the plant shutdowns initiated under LCO 3.0.3 resulted in a shutdown. This indicates that if licensees were given additional time to resolve the condition, an unnecessary plant transient associated with initiating a plant shutdown could be avoided.

The goal of the proposed change is to improve plant safety by avoiding an unwarranted plant transient. It is unlikely that a licensee could request and obtain relief from the NRC, such as Enforcement Discretion or a license amendment, within the existing one-hour preparation period provided by LCO 3.0.3. However, pursuing such relief during the proposed 24-hour preparation period is possible, in parallel with efforts to correct the condition and to prepare for an orderly shutdown.

### **3.2. Detailed Justification**

#### **3.2.1. LCO 3.0.3.b May be Used if Risk is Assessed and Managed.**

A requirement that risk be assessed and managed has previously been added to:

- LCO 3.0.4 (Mode changes),
- LCO 3.0.8 (Nonfunctional Snubbers),
- LCO 3.0.9 (Nonfunctional Barriers), and
- SR 3.0.3 (Missed Surveillances).

In all of these cases, risk is assessed using the existing 10 CFR 50.65(a)(4) (i.e., the Maintenance Rule) tools, which are well established and readily available to operators. The NRC's approval of these changes and the TS Bases require the risk assessments to be conducted using the procedures and guidance in Section 11 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," which is endorsed by NRC Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." These tools are used to reduce the likelihood of initiating events, reduce the likelihood of the unavailability of redundant trains, and increase the likelihood of successful operator actions in response to an initiating event. The same requirement is imposed by the proposed change.

In order to use the 24 hour preparation period in LCO 3.0.3.b, there may be no more than minimal increase in risk (i.e., the level determined acceptable during normal work control levels<sup>3</sup>) and no net increase in risk after implementation of any risk management actions.

Assessment and management of risk requires knowing the likely cause of the failures or variables outside of their limits which resulted in LCO 3.0.3 entry in order to assess the risk and to take the appropriate risk management actions. A formal cause or apparent cause evaluation is not required because of the limited time available; however, the likely cause should be known. If

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<sup>3</sup> NUMARC 93-01 describes an activity subject to "normal work controls" as having an incremental core damage probability (ICDP) < 1E-6 and an Incremental Large Early Release Probability (ILERP) of < 1E-7.

the extent of condition is unknown when using LCO 3.0.3.b, the risk assessment should consider the increased possibility of common cause failure either numerically or through risk management actions.

### Implementation of Maintenance Rule Risk Assessments

The risk assessment, for the purposes of LCO 3.0.3.b, must consider all inoperable TS equipment regardless of whether the equipment is included in the normal 10 CFR 50.65(a)(4) risk assessment scope. Section 11 of NUMARC 93-01 provides guidance for conduct of the risk assessment, quantitative and qualitative guidelines for establishing risk management actions, and example risk management actions. Assessing the risk means using a risk-informed process to evaluate the overall contribution to risk of the planned maintenance activities. Managing the risk means providing plant personnel with proper awareness of the risk, and taking actions as appropriate to control the risk. The process for conducting the risk assessments and using the result of the assessment in plant decisionmaking are proceduralized and denote responsibilities and process for conducting the assessment for cases when the plant configuration is not covered by the normal assessment tool.

In the operating Modes in which LCO 3.0.3 is applicable, the risk assessment considers the impact on the key plant safety functions that ensure the integrity of the reactor coolant pressure boundary, ensure the capability to shut down and maintain the reactor in a safe shutdown condition, and ensure the capability to prevent or mitigate the consequences of accidents that could result in potentially significant offsite exposures.

The risk assessment considers factors such as:

- Technical specifications requirements;
- The degree of redundancy available for performance of the safety function(s) served by the inoperable equipment;
- The duration of the condition;
- The likelihood of an initiating event or accident that would require the performance of the affected safety function;
- The likelihood that the inoperable equipment will significantly increase the frequency of a risk-significant initiating event;
- Component and system dependencies that are affected; and
- Significant performance issues for the in-service redundant SSCs.

The risk assessment must also consider emergent conditions that may arise, such as additional inoperable equipment due to failures, or significant changes in external conditions (weather, offsite power availability). The risk assessment must consider internal events, internal floods, and internal fires.

Risk management actions include planning and conducting plant activities in a manner that controls overall risk, increased risk awareness by shift and management personnel, actions to minimize the magnitude of risk increases (establishment of backup success paths or compensatory measures), and determination that use of the 24 hour period before initiating a shutdown is acceptable.

The risk assessment and risk management actions consider the activities required to restore the inoperable equipment, such as jumpering terminals, lifting leads, placing temporary lead shielding on pipes and equipment, removal of barriers, and use of temporary blocks, bypasses, scaffolding and supports.

As discussed in the proposed TS Bases, the risk assessment must be completed, and any necessary risk management actions must be implemented prior to using the extended preparation time permitted under LCO 3.0.3.b.

#### NEI 18-10

Some licensees use NEI 18-10, "Monitoring the Effectiveness of Nuclear Power Plant Maintenance," as guidance in implementing 10 CFR 50.65 (i.e., the Maintenance Rule) in lieu of NUMARC 93-01. The primary difference between NEI 18-10 and NUMARC 93-01 is in the implementation of 10 CFR 50.65(a)(2), which governs which systems are subject to preventative maintenance programs. However, the proposed LCO 3.0.3.b Bases state that the risk assessment performed to support LCO 3.0.3.b includes all inoperable TS equipment regardless of whether the equipment is included in the normal 10 CFR 50.65(a)(4) risk assessment scope. Therefore, use of NEI 18-10 has no effect on the use of the proposed change.

NEI 18-10, Section 11, "(A)(4) Assessment," was copied from Section 11 of NUMARC 93-01 without change. Therefore, it is accurate for the Bases to state that the risk assessments will be conducted using the procedures and guidance endorsed by Regulatory Guide 1.160, which endorses the guidance in Section 11 of NUMARC 93-01, regardless of whether the licensee is following NUMARC 93-01 or NEI 18-10.

### **3.2.2. LCO 3.0.3.b May Be Used if the Entry is Unplanned**

The use of the 24 hour preparation time may not be used if entry into LCO 3.0.3 is planned. For example, if Train A of a two train system is inoperable due to maintenance, the licensee may not plan to make Train B inoperable such that LCO 3.0.3 is applicable and then apply LCO 3.0.3.b to delay initiation of a shutdown for 24 hours. However, if Train A of a two train system is inoperable for maintenance and emergent conditions result in Train B being inoperable causing entry into LCO 3.0.3, use of LCO 3.0.3.b is not prohibited.

As stated in the current TS Bases, planned entry into LCO 3.0.3 should be avoided. If it is not practicable to avoid planned entry into LCO 3.0.3, plant risk should be assessed and managed in accordance with 10 CFR 50.65(a)(4), and the planned entry into LCO 3.0.3 should have less effect on plant safety than other practicable alternatives. Planned entry into LCO 3.0.3, if determined to be appropriate, is limited to the current one-hour preparation time in LCO 3.0.3.a.

### **3.2.3. Justification of the 24 Hour Preparation Period**

The proposed alternative 24 hour period to prepare for a plant shutdown under LCO 3.0.3.b is based on accomplishing one or more of three goals, which will typically be performed in parallel:

- Preparing for an orderly plant shutdown;

- Restoration of equipment or parameters and exiting LCO 3.0.3; or
- Requesting relief from the NRC.

Preparing for an orderly plant shutdown may include many activities, such as:

- Bring an additional operating crew on site to support the shutdown, which considers that the LCO 3.0.3 entry may occur on a weekend, holiday, or during a night shift when there may be less staff on site.
- Bring in additional site technical and maintenance support staff to secure any station maintenance in progress, restore any inoperable components necessary for shutdown, or address any maintenance issue that arise during shutdown.
- Bring in simulator staff to support simulator exercises of a shutdown with the inoperable equipment that led to entry into LCO 3.0.3. The simulator staff must familiarize themselves with the situation and prepare training scenarios.
- Conduct simulator training to prepare the crew for the shutdown considering the current plant condition, including the inoperable equipment. This may include turn-over to another shift crew to staff the control room during training.
- Perform just-in-time procedure reviews to prepare for the shutdown. Additional operating staff may be needed to allow the shutdown shift to perform the reviews.
- Coordinate with the transmission load dispatcher for power requirements with the station offline.

Therefore, if the proposed conditions are met, providing 24 hours to prepare for a shutdown is reasonable.

The licensee should have a reasonable scope and schedule for restoring compliance such that LCO 3.0.3 is no longer applicable. However, it is not required that the schedule be 24 hours or less, as the licensee may be pursuing regulatory relief or an orderly shutdown in parallel with working to restore equipment to service.

In parallel with repairs and preparing for an orderly shutdown, the licensee may pursue regulatory relief to provide additional time to repair the condition. The NRC Enforcement Manual, Appendix F, "Notices of Enforcement Discretion," describes the process for considering enforcement discretion. While not impossible, it is unlikely that a licensee could provide the requested information and for the NRC staff to have sufficient time to consider the request and render a decision under the current LCO 3.0.3 one-hour before a plant shutdown is initiated. However, if the proposed conditions are satisfied the proposed 24 hour preparation time would be sufficient for the licensee to request and for the NRC to consider enforcement discretion or an emergency license amendment under the provisions of 10 CFR 50.91(a)(5).

#### **3.2.4. Use of LCO 3.0.3.a or LCO 3.0.3.b**

The proposed Bases provide guidance to licensees when applying the revised LCO 3.0.3. In order to use LCO 3.0.3.b, the risk assessment and risk management actions must be implemented before using the 24-hour preparation period. It is possible for a licensee to be in LCO 3.0.3.a and to determine that the conditions for use of LCO 3.0.3.b can be met. It is also possible for a licensee to be utilizing LCO 3.0.3.b and no longer satisfy the conditions. For example, during

repair of a condition it could be discovered that the cause was different than initially thought, resulting in unacceptable risk. In all cases, the time to prepare for a shutdown begins on entry into LCO 3.0.3. If moving from LCO 3.0.3.b to LCO 3.0.3.a and more than one hour has elapsed since entering LCO 3.0.3, the shutdown actions begin immediately. If moving from LCO 3.0.3.a to LCO 3.0.3.b, the 24 hour preparation period begins on entry into LCO 3.0.3, not on invoking LCO 3.0.3.b. The times to be in lower Modes are not reduced so that there is always time provided for an orderly shutdown.

### **3.3. Editorial Changes to LCO 3.0.3 to Facilitate the Alternate Preparation Time**

The proposed change provides an alternative to the current one-hour provided (i.e., new LCOs 3.0.3.a and 3.0.3.b) to prepare for a plant shutdown. Implementing this alternative required revision of the existing LCO 3.0.3 wording. LCO 3.0.3 is revised to state the entry condition, the actions to take, the time limits and limitations on those actions, and the shutdown requirements if the actions are not completed. By themselves, these changes do not alter the application of LCO 3.0.3 if the existing one hour period for preparing for a shutdown is used.

The LCO 3.0.3 first paragraph is revised to permit the use of the one-hour or 24 hour preparation time. LCO 3.0.3 currently states, "... the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:" This sentence is rearranged to state, "... action shall be initiated to place the unit in a MODE or other specified condition in which the LCO is not applicable within:" This change permits specifying the preparation time as LCO 3.0.3.a and LCO 3.0.3.b without altering the intent.

A new sentence is added to clarify that the shutdown actions follow the 1 hour or 24 hour preparation time. It states, "At the end of the 1 hour or 24 hour period:" This clarifies the serial application of LCO 3.0.3.a or LCO 3.0.3.b and the times to reach the specified Modes.

The existing LCO 3.0.3 list of Modes and times are in a numbered list as a., b., and c. To avoid confusion with LCO 3.0.3.a and LCO 3.0.3.b, the numbered list is replaced with an unnumbered list. As stated in the Writer's Guide, Section 4.1.4, "LCO Content," paragraph c, "Simple lists with lead in guidance to meet all or only one of the items in the list, may use 'and' and 'or' respectively, within the text."

The Mode and time requirements are revised to begin with "Be in," such as "Be in Mode 3 within 6 hours," to be consistent with TS Example 1.3-1 and other Required Actions.

The revision to LCO 3.0.3 required a change to the time to be in the listed Modes. One hour is subtracted from each time. If LCO 3.0.3.a is used, the times to reach the designated Modes are unchanged (e.g., PWR Mode 3 in 7 hours). If the proposed LCO 3.0.3.b is used, the times begin after the 24 hour period has expired (e.g., PWR Mode 3 in 30 hours).

The penultimate paragraph of LCO 3.0.3 states, "Where corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, completion of the actions required by LCO 3.0.3 is not required." This is revised to state, "If corrective measures are completed..., then ..." as an editorial improvement.

### **3.4. TS Bases Changes**

The TS Bases are revised to reflect the changes to LCO 3.0.3. The Bases discuss the requirement that risk be assessed and managed, and state that the risk assessment must be conducted using the procedures and guidance endorsed by Regulatory Guide 1.160 and Section 11 of NUMARC 93-01," and that the risk assessment must determine that the use of the 24-hour period is acceptable. Acceptability is based on the guidelines in NUMARC 93-01; that is, there should be no more than minimal increase in risk (i.e., the level determined acceptable during normal work control levels) and no net increase in risk after implementation of risk management actions. The Bases also discuss the treatment of common cause in the risk assessment.

### **3.5. Conclusion**

The proposed change will enhance plant safety by avoiding unnecessary plant shutdown transients under the appropriate conditions by permitting time to rectify the condition, permitting time to prepare for an orderly plant shutdown, or by permitting time to request NRC relief.

## **4. REGULATORY EVALUATION**

The regulation at Title 10 of the Code of Federal Regulations (10 CFR) Section 50.36(b) requires:

Each license authorizing operation of a ... utilization facility ... will include technical specifications. The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to [10 CFR] 50.34 ["Contents of applications; technical information"]. The Commission may include such additional technical specifications as the Commission finds appropriate.

Per 10 CFR 50.90, whenever a holder of a license desires to amend the license, application for an amendment must be filed with the Commission, fully describing the changes desired, and following as far as applicable, the form prescribed for original applications.

Per 10 CFR 50.92(a), in determining whether an amendment to a license will be issued to the applicant, the Commission will be guided by the considerations which govern the issuance of initial licenses to the extent applicable and appropriate.

Section IV, "The Commission Policy," of the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (58 FR 39132), dated July 22, 1993, states in part that improved STS have been developed and will be maintained for each NSSS owners group. The Commission Policy encourages licensees to use the improved STS as the basis for plant-specific Technical Specifications." The industry's proposal of travelers and the NRC's approval of travelers is the method used to maintain the improved STS as described in the Commission's Policy. Following NRC approval, licensees adopt travelers into their plant-specific technical specifications following the requirements of 10 CFR 50.90. Therefore, the traveler process facilitates the Commission's policy while satisfying the requirements of the applicable regulations.

The regulation at 10 CFR 50.36(a)(1) also requires the application to include a "summary statement of the bases or reasons for such specifications, other than those covering administrative controls".

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the approval of the proposed change will not be inimical to the common defense and security or to the health and safety of the public.

## **5. REFERENCES**

1. None

## **Model Application**



[DATE]

10 CFR 50.90

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

DOCKET NO.PLANT NAME

[50][52]-[xxx]

SUBJECT: Application to Revise Technical Specifications to Adopt  
TSTF-585, "Provide an Alternative to the LCO 3.0.3 One-Hour  
Preparation Time"

Pursuant to 10 CFR 50.90, [LICENSEE] is submitting a request for an amendment to the Technical Specifications (TS) for [PLANT NAME, UNIT NOS.].

[LICENSEE] requests adoption of TSTF-585, "Provide an Alternative to the LCO 3.0.3 One-Hour Preparation Time," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] TS. TSTF-585 revises the Limiting Condition for Operation (LCO) 3.0.3 one-hour period provided to prepare for a shutdown by adding an alternative of 24-hours in some circumstances to allow additional time for plant shutdown preparations, to perform repairs, or to request relief from the NRC.

The enclosure provides a description and assessment of the proposed changes. Attachment 1 provides the existing TS pages marked to show the proposed changes. Attachment 2 provides revised (clean) TS pages. Attachment 3 provides the existing TS Bases pages marked to show revised text associated with the proposed TS changes and is provided for information only.

[LICENSEE] requests that the amendment be reviewed under the Consolidated Line Item Improvement Process (CLIIP). Approval of the proposed amendment is requested within 6 months of completion of the NRC's acceptance review. Once approved, the amendment shall be implemented within 90 days.

This letter contains no new regulatory commitments.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated [STATE] Official.

[In accordance with 10 CFR 50.30(b), a license amendment request must be executed in a signed original under oath or affirmation. This can be accomplished by attaching a notarized affidavit confirming the signature authority of the signatory, or by including the following statement in the cover letter: "I declare under penalty of perjury that the foregoing is true and correct. Executed on (date)." The alternative statement is pursuant to 28 USC 1746. It does not require notarization.]

If you should have any questions regarding this submittal, please contact [NAME, TELEPHONE NUMBER].

Sincerely,

[Name, Title]

Enclosure:     Description and Assessment

Attachments: 1.    Proposed Technical Specification Changes (Mark-Up)  
                  2.    Revised Technical Specification Pages  
                  3.    Proposed Technical Specification Bases Changes (Mark-Up) – For  
                         Information Only

[The attachments are to be provided by the licensee and are not included in the model application.]

cc:     NRC Project Manager  
         NRC Regional Office  
         NRC Resident Inspector  
         State Contact

## ENCLOSURE

## DESCRIPTION AND ASSESSMENT

## 1.0 DESCRIPTION

[LICENSEE] requests adoption of TSTF-585, "Provide an Alternative to the LCO 3.0.3 One-Hour Preparation Time," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] Technical Specifications (TS). TSTF-585 revises the Limiting Condition for Operation (LCO) 3.0.3 one-hour period provided to prepare for a shutdown by adding an alternative of 24-hours in some circumstances to allow additional time for plant shutdown preparations, to perform repairs, or to request relief from the NRC.

## 2.0 ASSESSMENT

## 2.1 Applicability of Safety Evaluation

[LICENSEE] has reviewed the safety evaluation for TSTF-585 provided to the Technical Specifications Task Force in a letter dated [DATE]. This review included a review of the NRC staff's evaluation, as well as the information provided in TSTF-585. [As described herein,] [LICENSEE] has concluded that the justifications presented in TSTF-585 and the safety evaluation prepared by the NRC staff are applicable to [PLANT, UNIT NOS.] and justify this amendment for the incorporation of the changes to the [PLANT] TS.

## 2.2 Variations

[LICENSEE is not proposing any variations from the TS changes described in TSTF-585 or the applicable parts of the NRC staff's safety evaluation dated [DATE.] [LICENSEE is proposing the following variations from the TS changes described in TSTF-585 or the applicable parts of the NRC staff's safety evaluation: describe the variations.]

[The [PLANT] TS utilize different [numbering][and][titles] than the STS on which TSTF-585 was based. Specifically, [describe differences between the plant-specific TS numbering and/or titles and the TSTF-585 numbering and titles.] These differences are administrative and do not affect the applicability of TSTF-585 to the [PLANT] TS.]

[The [PLANT] TS contain requirements that differ from the STS on which TSTF-585 was based but are encompassed in the TSTF-585 justification. [Describe differences and why TSTF-585 is still applicable.]

## 3.0 REGULATORY ANALYSIS

## 3.1 No Significant Hazards Consideration Analysis

[LICENSEE] requests adoption of TSTF-585, "Provide an Alternative to the LCO 3.0.3 One-Hour Preparation Time," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] Technical Specifications (TS). TSTF-585 revises the Limiting Condition for Operation (LCO) 3.0.3 one-hour period provided to prepare for a

shutdown by adding an alternative of 24-hours in some circumstances to allow additional time for plant shutdown preparations, to perform repairs, or to request relief from the NRC.

[LICENSEE] has evaluated if a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

Response: No

The proposed change revises LCO 3.0.3 to provide additional time under specific circumstances before initiating a plant shutdown.

The proposed change does not affect the capability of any system to perform a design function as assumed in previously evaluated accidents because the affected systems are inoperable prior to entering LCO 3.0.3. The time permitted before initiating a plant shutdown when Technical Specification requirements are not met is not an assumption in any design basis accident or transient. Equipment that is inoperable prior to an analyzed event is not an initiator of any accident previously evaluated. Therefore, the probability of any accident previously evaluated is not affected.

The consequences of any design basis accident or transient that might occur during the alternative period prior to initiation of a plant shutdown are no different than the consequences of such an event during the current delay period provided by LCO 3.0.3. The likelihood of malfunction of equipment is not affected as the applicable equipment is inoperable prior to entering LCO 3.0.3. As a result, the consequences of previously evaluated accidents are not affected.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No

The proposed change revises LCO 3.0.3 to provide additional time under specific circumstances before initiating a plant shutdown. The proposed change only alters the time permitted before initiating a plant shutdown in some circumstances. The proposed change does not alter the design function or operation of any equipment, as the affected equipment is inoperable when LCO 3.0.3 is entered. The design basis accidents and transients considered in the updated final safety analysis report (UFSAR) assume that equipment is operable at the beginning of the analysis, and the time permitted to restore inoperable equipment or variables outside of limits is not an assumption in the UFSAR in any design basis accident or transient analyses. Therefore, providing a longer period after entering LCO 3.0.3 before initiating a plant shutdown would not have been

considered a new or different design basis accident in the UFSAR if it had been previously identified.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No

The proposed change revises LCO 3.0.3 to provide additional time under specific circumstances before initiating a plant shutdown. The proposed change only alters the time permitted before initiating a plant shutdown in some circumstances. The proposed change does not affect specific values assumed in the design and licensing basis or controlling values of parameters. The proposed change does not alter a design basis or safety limit.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, [LICENSEE] concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

### 3.2 Conclusion

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

## 4.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

## **Technical Specifications and Bases Changes**

### 3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

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LCO 3.0.1	LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2, LCO 3.0.7, LCO 3.0.8, and LCO 3.0.9.
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LCO 3.0.2	Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.
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If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

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LCO 3.0.3	When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, <del>the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action</del> <b>action</b> shall be initiated <b>to place the unit in a MODE or other specified condition in which the LCO is not applicable</b> within <del>1 hour to place the unit, as applicable, in:</del>
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**a. 1 hour; or**

**b. 24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**At the end of the 1 hour or 24 hour period:**

~~a. Be in~~ **Be in** MODE 3 within ~~67~~ hours,

~~b. Be in~~ **Be in** MODE 4 within ~~1243~~ hours, and

~~c. Be in~~ **Be in** MODE 5 within ~~3637~~ hours.

Exceptions to this Specification are stated in the individual Specifications.

~~If Where~~ corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, **then** completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.

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LCO 3.0.4	When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:
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a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

BASES

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## LCO 3.0.2 (continued)

The nature of some Required Actions of some Conditions necessitates that, once the Condition is entered, the Required Actions must be completed even though the associated Conditions no longer exist. The individual LCO's ACTIONS specify the Required Actions where this is the case. An example of this is in LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits."

The Completion Times of the Required Actions are also applicable when a system or component is removed from service intentionally. The ACTIONS for not meeting a single LCO adequately manage any increase in plant risk, provided any unusual external conditions (e.g., severe weather, offsite power instability) are considered. In addition, the increased risk associated with simultaneous removal of multiple structures, systems, trains or components from service is assessed and managed in accordance with 10 CFR 50.65(a)(4). Individual Specifications may specify a time limit for performing an SR when equipment is removed from service or bypassed for testing. In this case, the Completion Times of the Required Actions are applicable when this time limit expires, if the equipment remains removed from service or bypassed.

When a change in MODE or other specified condition is required to comply with Required Actions, the unit may enter a MODE or other specified condition in which another Specification becomes applicable. In this case, the Completion Times of the associated Required Actions would apply from the point in time that the new Specification becomes applicable and the ACTIONS Condition(s) are entered.

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## LCO 3.0.3

LCO 3.0.3 establishes the actions that must be implemented when an LCO is not met and either:

- a. An associated Required Action and Completion Time is not met and no other Condition applies or
- b. The condition of the unit is not specifically addressed by the associated ACTIONS. This means that no combination of Conditions stated in the ACTIONS can be made that exactly corresponds to the actual condition of the unit. Sometimes, possible combinations of Conditions are such that entering LCO 3.0.3 is warranted; in such cases, the ACTIONS specifically state a Condition corresponding to such combinations and also that LCO 3.0.3 be entered immediately.



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## LCO 3.0.3 (continued)

This Specification delineates the time limits for placing the unit in a safe MODE or other specified condition when operation cannot be maintained within the limits for safe operation as defined by the LCO and its ACTIONS. Planned entry into LCO 3.0.3 should be avoided. If it is not practicable to avoid planned entry into LCO 3.0.3, plant risk should be assessed and managed in accordance with 10 CFR 50.65(a)(4), and the planned entry into LCO 3.0.3 should have less effect on plant safety than other practicable alternatives.

Upon entering LCO 3.0.3, ~~time 1 hour is allowed to prepare for an orderly shutdown~~ **provided in LCO 3.0.3.a and LCO 3.0.3.b** before initiating a change in unit operation.

**LCO 3.0.3.a provides one hour to prepare for a plant shutdown.** This ~~includes time to~~ permits the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid.

**Alternatively, LCO 3.0.3.b provides 24 hours before initiating a plant shutdown to perform repairs, prepare for an orderly plant shutdown, or to pursue regulatory relief if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**LCO 3.0.3.b may not be used if entry into LCO 3.0.3 is planned. Planned entry into LCO 3.0.3, if determined to be appropriate, is limited to the time limit in LCO 3.0.3.a.**

**LCO 3.0.3.b may be used if risk is assessed and managed. The risk assessment must consider all inoperable equipment regardless of whether the equipment is included in the normal 10 CFR 50.65(a)(4) risk assessment scope. The risk assessments will be conducted using the procedures and guidance endorsed by Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Regulatory Guide 1.160 endorses the guidance in Section 11 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." These documents address general guidance for conduct of the risk assessment, quantitative and qualitative guidelines for establishing risk management actions, and example risk management actions. These include actions to plan and conduct other activities in a manner that controls overall risk, increased risk awareness by shift and management personnel, actions to reduce the duration of the condition, actions to minimize the magnitude of risk increases (establishment of backup success paths or compensatory measures), and determination that use of the 24 hour period before initiating a shutdown is acceptable. There may be no more than**

minimal increase in risk (i.e., the level determined acceptable during normal work control levels) and no net increase in risk after implementation of risk management actions.

The use of LCO 3.0.3.b is not dependent on planned restoration of compliance with the LCO or ACTIONS within 24 hours as other actions are available, such as regulatory relief or an orderly shutdown.

To assess and manage risk, the likely cause of the conditions that resulted in LCO 3.0.3 entry should be understood. A formal cause or apparent cause evaluation is not required because of the limited time available. If the extent of condition is unknown the risk assessment should consider the increased possibility of common cause failure either numerically or through risk management actions.

The time limits in LCO 3.0.3.a and LCO 3.0.3.b begin on entry into LCO 3.0.3. The risk assessment be completed before using LCO 3.0.3.b. If LCO 3.0.3.b is entered and later the conditions for use are no longer satisfied, LCO 3.0.3.a is entered, and the one hour period begins when LCO 3.0.3 was entered. If the one hour has expired and operation is not in accordance with the LCO or ACTIONS, the requirements to enter a lower MODE begins immediately (i.e., MODE 3 must be entered within the following 6 hours). If LCO 3.0.3.a is entered and later the requirements of LCO 3.0.3.b are satisfied, the LCO 3.0.3.b period begins when LCO 3.0.3 was entered, even if a plant shutdown has begun.

The time limits specified to enter lower MODES of operation begin if operation is not in accordance with the LCO or ACTIONS within the time periods in LCO 3.0.3.a or LCO 3.0.3.b. The time limits ~~specified to enter lower MODES of operation~~ permit the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the capabilities of the unit, assuming that only the minimum required equipment is OPERABLE. This reduces thermal stresses on components of the Reactor Coolant System and the potential for a plant upset that could challenge safety systems under conditions to which this Specification applies. The use and interpretation of specified times to complete the actions of LCO 3.0.3 are consistent with the discussion of Section 1.3, Completion Times.

A unit shutdown required in accordance with LCO 3.0.3 may be terminated and LCO 3.0.3 exited if any of the following occurs:

- a. The LCO is now met,
- b. The LCO is no longer applicable,

- c. A Condition exists for which the Required Actions have now been performed, or
- d. ACTIONS exist that do not have expired Completion Times. These Completion Times are applicable from the point in time that the Condition is initially entered and not from the time LCO 3.0.3 is exited.

The time limits of LCO 3.0.3 allow ~~36~~37 hours for the unit to be in MODE 5 ~~when-after~~ a shutdown is ~~initiated required~~ during MODE 1 operation. If the unit is in a lower MODE of operation when a shutdown is required, the time limit for entering the next lower MODE applies. If a lower MODE is entered in less time than allowed, however, the total allowable time to enter MODE 5, or other applicable MODE, is not reduced. For example, if MODE 3 is entered in 2 hours, then the time allowed for entering MODE 4

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## LCO 3.0.3 (continued)

is the next ~~1011~~ hours, because the total time for entering MODE 4 is not reduced from the allowable limit of ~~1213~~ hours. Therefore, if remedial measures are completed that would permit a return to MODE 1, a penalty is not incurred by having to enter a lower MODE of operation in less than the total time allowed.

In MODES 1, 2, 3, and 4, LCO 3.0.3 provides actions for Conditions not covered in other Specifications. The requirements of LCO 3.0.3 do not apply in MODES 5 and 6 because the unit is already in the most restrictive Condition required by LCO 3.0.3. The requirements of LCO 3.0.3 do not apply in other specified conditions of the Applicability (unless in MODE 1, 2, 3, or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken.

Exceptions to LCO 3.0.3 are provided in instances where requiring a unit shutdown, in accordance with LCO 3.0.3, would not provide appropriate remedial measures for the associated condition of the unit. An example of this is in LCO 3.7.14, "Fuel Storage Pool Water Level." LCO 3.7.14 has an Applicability of "During movement of irradiated fuel assemblies in fuel storage pool." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.14 are not met while in MODE 1, 2, 3, or 4, there is no safety benefit to be gained by placing the unit in a shutdown condition. The Required Action of LCO 3.7.14 of "Suspend movement of irradiated fuel assemblies in fuel storage pool" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.

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LCO 3.0.4

LCO 3.0.4 establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It allows placing the unit in a MODE or other specified condition stated in that Applicability (e.g., the Applicability desired to be entered) when unit conditions are such that the requirements of the LCO would not be met, in accordance with either LCO 3.0.4.a, LCO 3.0.4.b, or LCO 3.0.4.c.

LCO 3.0.4.a allows entry into a MODE or other specified condition in the Applicability with the LCO not met when the associated ACTIONS to be entered following entry into the MODE or other specified condition in the Applicability will permit continued operation within the MODE or other specified condition for an unlimited period of time. Compliance with ACTIONS that permit continued operation of the unit for an unlimited period of time in a MODE or other specified condition provides an acceptable level of safety for continued operation. This is without regard

### 3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1	LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2, LCO 3.0.7, LCO 3.0.8, and LCO 3.0.9.
LCO 3.0.2	<p>Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.</p> <p>If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required unless otherwise stated.</p>
LCO 3.0.3	<p>When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, <del>the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable.</del> <b>a</b>Action shall be initiated <b>to place the unit in a MODE or other specified condition in which the LCO is not applicable</b> within <del>1 hour to place the unit, as applicable, in:</del></p> <ul style="list-style-type: none"> <li><b>a. 1 hour; or</b></li> <li><b>b. 24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.</b></li> </ul> <p><b>At the end of the 1 hour or 24 hour period:</b></p> <ul style="list-style-type: none"> <li><del>a.</del> <b>Be in</b> MODE 3 within <del>67</del> hours,</li> <li><del>b.</del> <b>Be in</b> MODE 4 within <del>1213</del> hours, and</li> <li><del>c.</del> <b>Be in</b> MODE 5 within <del>3637</del> hours.</li> </ul> <p>Exceptions to this Specification are stated in the individual Specifications.</p> <p><del>If Where</del> corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, <b>then</b> completion of the actions required by LCO 3.0.3 is not required.</p> <p>LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.</p>
LCO 3.0.4	<p>When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:</p> <ul style="list-style-type: none"> <li>a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;</li> </ul>

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## LCO 3.0.2 (continued)

The nature of some Required Actions of some Conditions necessitates that, once the Condition is entered, the Required Actions must be completed even though the associated Conditions no longer exist. The individual LCO's ACTIONS specify the Required Actions where this is the case. An example of this is in LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits."

The Completion Times of the Required Actions are also applicable when a system or component is removed from service intentionally. The ACTIONS for not meeting a single LCO adequately manage any increase in plant risk, provided any unusual external conditions (e.g., severe weather, offsite power instability) are considered. In addition, the increased risk associated with simultaneous removal of multiple structures, systems, trains or components from service is assessed and managed in accordance with 10 CFR 50.65(a)(4). Individual Specifications may specify a time limit for performing an SR when equipment is removed from service or bypassed for testing. In this case, the Completion Times of the Required Actions are applicable when this time limit expires, if the equipment remains removed from service or bypassed.

When a change in MODE or other specified condition is required to comply with Required Actions, the unit may enter a MODE or other specified condition in which another Specification becomes applicable. In this case, the Completion Times of the associated Required Actions would apply from the point in time that the new Specification becomes applicable, and the ACTIONS Condition(s) are entered.

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## LCO 3.0.3

LCO 3.0.3 establishes the actions that must be implemented when an LCO is not met and:

- a. An associated Required Action and Completion Time is not met and no other Condition applies or
- b. The condition of the unit is not specifically addressed by the associated ACTIONS. This means that no combination of Conditions stated in the ACTIONS can be made that exactly corresponds to the actual condition of the unit. Sometimes, possible combinations of Conditions are such that entering LCO 3.0.3 is warranted; in such cases, the ACTIONS specifically state a Condition corresponding to such combinations and also that LCO 3.0.3 be entered immediately.

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## LCO 3.0.3 (continued)

This Specification delineates the time limits for placing the unit in a safe MODE or other specified condition when operation cannot be maintained within the limits for safe operation as defined by the LCO and its ACTIONS. Planned entry into LCO 3.0.3 should be avoided. If it is not practicable to avoid planned entry into LCO 3.0.3, plant risk should be assessed and managed in accordance with 10 CFR 50.65(a)(4), and the planned entry into LCO 3.0.3 should have less effect on plant safety than other practicable alternatives.

Upon entering LCO 3.0.3, ~~time 1 hour is allowed to prepare for an orderly shutdown~~ **provided in LCO 3.0.3.a and LCO 3.0.3.b** before initiating a change in unit operation.

**LCO 3.0.3.a provides one hour to prepare for a plant shutdown.** This ~~includes time to~~ permits the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid.

**Alternatively, LCO 3.0.3.b provides 24 hours before initiating a plant shutdown to perform repairs, prepare for an orderly plant shutdown, or to pursue regulatory relief if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**LCO 3.0.3.b may not be used if entry into LCO 3.0.3 is planned. Planned entry into LCO 3.0.3, if determined to be appropriate, is limited to the time limit in LCO 3.0.3.a.**

**LCO 3.0.3.b may be used if risk is assessed and managed. The risk assessment must consider all inoperable equipment regardless of whether the equipment is included in the normal 10 CFR 50.65(a)(4) risk assessment scope. The risk assessments will be conducted using the procedures and guidance endorsed by Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Regulatory Guide 1.160 endorses the guidance in Section 11 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." These documents address general guidance for conduct of the risk assessment, quantitative and qualitative guidelines for establishing risk management actions, and example risk management actions. These include actions to plan and conduct other activities in a manner that controls overall risk, increased risk awareness by shift and management personnel, actions to reduce the duration of the condition, actions to minimize the magnitude of risk increases (establishment of backup success paths or compensatory measures), and determination that use of the 24 hour period before initiating a shutdown is acceptable. There may be no more than**

minimal increase in risk (i.e., the level determined acceptable during normal work control levels) and no net increase in risk after implementation of risk management actions.

The use of LCO 3.0.3.b is not dependent on planned restoration of compliance with the LCO or ACTIONS within 24 hours as other actions are available, such as regulatory relief or an orderly shutdown.

To assess and manage risk, the likely cause of the conditions that resulted in LCO 3.0.3 entry should be understood. A formal cause or apparent cause evaluation is not required because of the limited time available. If the extent of condition is unknown the risk assessment should consider the increased possibility of common cause failure either numerically or through risk management actions.

The time limits in LCO 3.0.3.a and LCO 3.0.3.b begin on entry into LCO 3.0.3. The risk assessment be completed before using LCO 3.0.3.b. If LCO 3.0.3.b is entered and later the conditions for use are no longer satisfied, LCO 3.0.3.a is entered, and the one hour period begins when LCO 3.0.3 was entered. If the one hour has expired and operation is not in accordance with the LCO or ACTIONS, the requirements to enter a lower MODE begins immediately (i.e., MODE 3 must be entered within the following 6 hours). If LCO 3.0.3.a is entered and later the requirements of LCO 3.0.3.b are satisfied, the LCO 3.0.3.b period begins when LCO 3.0.3 was entered, even if a plant shutdown has begun.

The time limits specified to enter lower MODES of operation begin if operation is not in accordance with the LCO or ACTIONS within the time periods in LCO 3.0.3.a or LCO 3.0.3.b. The time limits ~~specified to enter lower MODES of operation~~ permit the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the capabilities of the unit, assuming that only the minimum required equipment is OPERABLE. This reduces thermal stresses on components of the Reactor Coolant System and the potential for a plant upset that could challenge safety systems under conditions to which this Specification applies. The use and interpretation of specified times to complete the actions of LCO 3.0.3 are consistent with the discussion of Section 1.3, Completion Times.

A unit shutdown required in accordance with LCO 3.0.3 may be terminated and LCO 3.0.3 exited if any of the following occurs:

- a. The LCO is now met,
- b. The LCO is no longer applicable,



- c. A Condition exists for which the Required Actions have now been performed, or
- d. ACTIONS exist that do not have expired Completion Times. These Completion Times are applicable from the point in time that the Condition is initially entered and not from the time LCO 3.0.3 is exited.

The time limits of LCO 3.0.3 allow ~~36~~37 hours for the unit to be in MODE 5 ~~when-after~~ a shutdown is ~~initiated required~~ during MODE 1 operation. If the unit is in a lower MODE of operation when a shutdown is required, the time limit for entering the next lower MODE applies. If a lower MODE is entered in less time than allowed, however, the total allowable time to enter MODE 5, or other applicable MODE, is not reduced. For example, if MODE 3 is entered in 2 hours, then the time allowed for entering MODE 4

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## LCO 3.0.3 (continued)

is the next ~~1011~~ hours, because the total time for entering MODE 4 is not reduced from the allowable limit of ~~1213~~ hours. Therefore, if remedial measures are completed that would permit a return to MODE 1, a penalty is not incurred by having to enter a lower MODE of operation in less than the total time allowed.

In MODES 1, 2, 3, and 4, LCO 3.0.3 provides actions for Conditions not covered in other Specifications. The requirements of LCO 3.0.3 do not apply in MODES 5 and 6 because the unit is already in the most restrictive Condition required by LCO 3.0.3. The requirements of LCO 3.0.3 do not apply in other specified conditions of the Applicability (unless in MODE 1, 2, 3, or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken.

Exceptions to LCO 3.0.3 are provided in instances where requiring a unit shutdown, in accordance with LCO 3.0.3, would not provide appropriate remedial measures for the associated condition of the unit. An example of this is in LCO 3.7.15, "Fuel Storage Pool Water Level." LCO 3.7.15 has an Applicability of "During movement of irradiated fuel assemblies in the fuel storage pool." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.15 are not met while in MODE 1, 2, or 3, there is no safety benefit to be gained by placing the unit in a shutdown condition. The Required Action of LCO 3.7.15 of "Suspend movement of irradiated fuel assemblies in the fuel storage pool" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.

## LCO 3.0.4

LCO 3.0.4 establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It allows placing the unit in a MODE or other specified condition stated in that Applicability (e.g., the Applicability desired to be entered) when unit conditions are such that the requirements of the LCO would not be met, in accordance with either LCO 3.0.4.a, LCO 3.0.4.b, or LCO 3.0.4.c.

LCO 3.0.4.a allows entry into a MODE or other specified condition in the Applicability with the LCO not met when the associated ACTIONS to be entered following entry into the MODE or other specified condition in the Applicability will permit continued operation within the MODE or other specified condition for an unlimited period of time. Compliance with ACTIONS that permit continued operation of the unit for an unlimited period of time in a MODE or other specified condition provides an acceptable level of safety for continued operation. This is without regard to the status of the unit before or after the MODE change. Therefore, in

### 3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

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LCO 3.0.1 LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2, LCO 3.0.7, LCO 3.0.8, and LCO 3.0.9.

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LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.

If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

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LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, ~~the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable.~~ **a**Action shall be initiated **to place the unit in a MODE or other specified condition in which the LCO is not applicable** within ~~1 hour to place the unit, as applicable, in:~~

**a. 1 hour; or**

**b. 24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**At the end of the 1 hour or 24 hour period:**

~~a.~~ **Be in** MODE 3 within ~~67~~ hours,

~~b.~~ **[Be in** MODE 4 within ~~1213~~ hours, and

~~c.~~ **Be in** MODE 5 within ~~3637~~ hours.

Exceptions to this Specification are stated in the individual Specifications.

~~If Where~~ corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, **then** completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.

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LCO 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

- a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

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## LCO 3.0.2 (continued)

The nature of some Required Actions of some Conditions necessitates that, once the Condition is entered, the Required Actions must be completed even though the associated Conditions no longer exist. The individual LCO's ACTIONS specify the Required Actions where this is the case. An example of this is in LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits."

The Completion Times of the Required Actions are also applicable when a system or component is removed from service intentionally. The ACTIONS for not meeting a single LCO adequately manage any increase in plant risk, provided any unusual external conditions (e.g., severe weather, offsite power instability) are considered. In addition, the increased risk associated with simultaneous removal of multiple structures, systems, trains or components from service is assessed and managed in accordance with 10 CFR 50.65(a)(4). Individual Specifications may specify a time limit for performing an SR when equipment is removed from service or bypassed for testing. In this case, the Completion Times of the Required Actions are applicable when this time limit expires, if the equipment remains removed from service or bypassed.

When a change in MODE or other specified condition is required to comply with Required Actions, the unit may enter a MODE or other specified condition in which another Specification becomes applicable. In this case, the Completion Times of the associated Required Actions would apply from the point in time that the new Specification becomes applicable and the ACTIONS Condition(s) are entered.

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## LCO 3.0.3

LCO 3.0.3 establishes the actions that must be implemented when an LCO is not met and either:

- a. An associated Required Action and Completion Time is not met and no other Condition applies or
- b. The condition of the unit is not specifically addressed by the associated ACTIONS. This means that no combination of Conditions stated in the ACTIONS can be made that exactly corresponds to the actual condition of the unit. Sometimes, possible combinations of Conditions are such that entering LCO 3.0.3 is warranted; in such cases, the ACTIONS specifically state a Condition corresponding to such combinations and also that LCO 3.0.3 be entered immediately.

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## LCO 3.0.3 (continued)

This Specification delineates the time limits for placing the unit in a safe MODE or other specified condition when operation cannot be maintained within the limits for safe operation as defined by the LCO and its ACTIONS. Planned entry into LCO 3.0.3 should be avoided. If it is not practicable to avoid planned entry into LCO 3.0.3, plant risk should be assessed and managed in accordance with 10 CFR 50.65(a)(4), and the planned entry into LCO 3.0.3 should have less effect on plant safety than other practicable alternatives.

Upon entering LCO 3.0.3, ~~time 1 hour is allowed to prepare for an orderly shutdown~~ **provided in LCO 3.0.3.a and LCO 3.0.3.b** before initiating a change in unit operation.

**LCO 3.0.3.a provides one hour to prepare for a plant shutdown.** This ~~includes time to~~ permits the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid.

**Alternatively, LCO 3.0.3.b provides 24 hours before initiating a plant shutdown to perform repairs, prepare for an orderly plant shutdown, or to pursue regulatory relief if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**LCO 3.0.3.b may not be used if entry into LCO 3.0.3 is planned. Planned entry into LCO 3.0.3, if determined to be appropriate, is limited to the time limit in LCO 3.0.3.a.**

**LCO 3.0.3.b may be used if risk is assessed and managed. The risk assessment must consider all inoperable equipment regardless of whether the equipment is included in the normal 10 CFR 50.65(a)(4) risk assessment scope. The risk assessments will be conducted using the procedures and guidance endorsed by Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Regulatory Guide 1.160 endorses the guidance in Section 11 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." These documents address general guidance for conduct of the risk assessment, quantitative and qualitative guidelines for establishing risk management actions, and example risk management actions. These include actions to plan and conduct other activities in a manner that controls overall risk, increased risk awareness by shift and management personnel, actions to reduce the duration of the condition, actions to minimize the magnitude of risk increases (establishment of backup success paths or compensatory measures), and determination that use of the 24 hour period before initiating a shutdown is acceptable. There may be no more than**

minimal increase in risk (i.e., the level determined acceptable during normal work control levels) and no net increase in risk after implementation of risk management actions.

The use of LCO 3.0.3.b is not dependent on planned restoration of compliance with the LCO or ACTIONS within 24 hours as other actions are available, such as regulatory relief or an orderly shutdown.

To assess and manage risk, the likely cause of the conditions that resulted in LCO 3.0.3 entry should be understood. A formal cause or apparent cause evaluation is not required because of the limited time available. If the extent of condition is unknown the risk assessment should consider the increased possibility of common cause failure either numerically or through risk management actions.

The time limits in LCO 3.0.3.a and LCO 3.0.3.b begin on entry into LCO 3.0.3. The risk assessment be completed before using LCO 3.0.3.b. If LCO 3.0.3.b is entered and later the conditions for use are no longer satisfied, LCO 3.0.3.a is entered, and the one hour period begins when LCO 3.0.3 was entered. If the one hour has expired and operation is not in accordance with the LCO or ACTIONS, the requirements to enter a lower MODE begins immediately (i.e., MODE 3 must be entered within the following 6 hours). If LCO 3.0.3.a is entered and later the requirements of LCO 3.0.3.b are satisfied, the LCO 3.0.3.b period begins when LCO 3.0.3 was entered, even if a plant shutdown has begun.

The time limits specified to enter lower MODES of operation begin if operation is not in accordance with the LCO or ACTIONS within the time periods in LCO 3.0.3.a or LCO 3.0.3.b. The time limits ~~specified to enter lower MODES of operation~~ permit the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the capabilities of the unit, assuming that only the minimum required equipment is OPERABLE. This reduces thermal stresses on components of the Reactor Coolant System and the potential for a plant upset that could challenge safety systems under conditions to which this Specification applies. The use and interpretation of specified times to complete the actions of LCO 3.0.3 are consistent with the discussion of Section 1.3, Completion Times.

A unit shutdown required in accordance with LCO 3.0.3 may be terminated and LCO 3.0.3 exited if any of the following occurs:

- a. The LCO is now met,
- b. The LCO is no longer applicable,

- c. A Condition exists for which the Required Actions have now been performed, or
- d. ACTIONS exist that do not have expired Completion Times. These Completion Times are applicable from the point in time that the Condition is initially entered and not from the time LCO 3.0.3 is exited.

The time limits of LCO 3.0.3 allow ~~36~~37 hours for the unit to be in MODE 5 ~~when-after~~ a shutdown is ~~initiated required~~ during MODE 1 operation. If the unit is in a lower MODE of operation when a shutdown is required, the time limit for entering the next lower MODE applies. If a lower MODE is entered in less time than allowed, however, the total allowable time to enter

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## LCO 3.0.3 (continued)

MODE 5, or other applicable MODE, is not reduced. For example, if MODE 3 is entered in 2 hours, then the time allowed for entering MODE 4 is the next ~~10~~~~11~~ hours, because the total time for entering MODE 4 is not reduced from the allowable limit of ~~12~~~~13~~ hours. Therefore, if remedial measures are completed that would permit a return to MODE 1, a penalty is not incurred by having to enter a lower MODE of operation in less than the total time allowed.

In MODES 1, 2, 3, and 4, LCO 3.0.3 provides actions for Conditions not covered in other Specifications. The requirements of LCO 3.0.3 do not apply in MODES 5 and 6 because the unit is already in the most restrictive Condition required by LCO 3.0.3. The requirements of LCO 3.0.3 do not apply in other specified conditions of the Applicability (unless in MODE 1, 2, 3, or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken.

Exceptions to LCO 3.0.3 are provided in instances where requiring a unit shutdown, in accordance with LCO 3.0.3, would not provide appropriate remedial measures for the associated condition of the unit. An example of this is in LCO 3.7.16, "Fuel Storage Pool Water Level." LCO 3.7.16 has an Applicability of "During movement of irradiated fuel assemblies in the fuel storage pool." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.16 are not met while in MODE 1, 2, or 3, there is no safety benefit to be gained by placing the unit in a shutdown condition. The Required Action of LCO 3.7.16 of "Suspend movement of irradiated fuel assemblies in fuel storage pool" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.

[ The requirement to be in MODE 4 in 13 hours is plant specific and depends on the ability to cool the pressurizer and degas. ]

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## LCO 3.0.4

LCO 3.0.4 establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It allows placing the unit in a MODE or other specified condition stated in that Applicability (e.g., the Applicability desired to be entered) when unit conditions are such that the requirements of the LCO would not be met, in accordance with either LCO 3.0.4.a, LCO 3.0.4.b, or LCO 3.0.4.c.



## 3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

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LCO 3.0.1 LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2, LCO 3.0.7, LCO 3.0.8, and LCO 3.0.9.

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LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.

If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

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LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, ~~the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable.~~ **a**Action shall be initiated **to place the unit in a MODE or other specified condition in which the LCO is not applicable** within ~~1 hour to place the unit, as applicable, in:~~

**a. 1 hour; or**

**b. 24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**At the end of the 1 hour or 24 hour period:**

~~a.~~ **Be in** MODE 2 within **[67]** hours,

~~b.~~ **Be in** MODE 3 within **1213** hours, and

~~c.~~ **Be in** MODE 4 within **3637** hours.

Exceptions to this Specification are stated in the individual Specifications.

~~If Where~~ corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, **then** completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, and 3.

-----REVIEWER'S NOTE-----

The brackets around the time provided to reach MODE 2 allow a plant to extend the time from 7 hours to a plant specific time. Before the time can be changed, plant specific data must be provided to support the extended time.

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## LCO 3.0.2 (continued)

The nature of some Required Actions of some Conditions necessitates that, once the Condition is entered, the Required Actions must be completed even though the associated Conditions no longer exist. The individual LCO's ACTIONS specify the Required Actions where this is the case. An example of this is in LCO 3.4.10, "RCS Pressure and Temperature (P/T) Limits."

The Completion Times of the Required Actions are also applicable when a system or component is removed from service intentionally. The ACTIONS for not meeting a single LCO adequately manage any increase in plant risk, provided any unusual external conditions (e.g., severe weather, offsite power instability) are considered. In addition, the increased risk associated with simultaneous removal of multiple structures, systems, trains or components from service is assessed and managed in accordance with 10 CFR 50.65(a)(4). Individual Specifications may specify a time limit for performing an SR when equipment is removed from service or bypassed for testing. In this case, the Completion Times of the Required Actions are applicable when this time limit expires, if the equipment remains removed from service or bypassed.

When a change in MODE or other specified condition is required to comply with Required Actions, the unit may enter a MODE or other specified condition in which another Specification becomes applicable. In this case, the Completion Times of the associated Required Actions would apply from the point in time that the new Specification becomes applicable, and the ACTIONS Condition(s) are entered.

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## LCO 3.0.3

LCO 3.0.3 establishes the actions that must be implemented when an LCO is not met and:

- a. An associated Required Action and Completion Time is not met and no other Condition applies or
- b. The condition of the unit is not specifically addressed by the associated ACTIONS. This means that no combination of Conditions stated in the ACTIONS can be made that exactly corresponds to the actual condition of the unit. Sometimes, possible combinations of Conditions are such that entering LCO 3.0.3 is warranted; in such cases, the ACTIONS specifically state a Condition corresponding to such combinations and also that LCO 3.0.3 be entered immediately.

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## LCO 3.0.3 (continued)

This Specification delineates the time limits for placing the unit in a safe MODE or other specified condition when operation cannot be maintained within the limits for safe operation as defined by the LCO and its ACTIONS. Planned entry into LCO 3.0.3 should be avoided. If it is not practicable to avoid planned entry into LCO 3.0.3, plant risk should be assessed and managed in accordance with 10 CFR 50.65(a)(4), and the planned entry into LCO 3.0.3 should have less effect on plant safety than other practicable alternatives.

Upon entering LCO 3.0.3, ~~time 1 hour is allowed to prepare for an orderly shutdown~~ **provided in LCO 3.0.3.a and LCO 3.0.3.b** before initiating a change in unit operation.

**LCO 3.0.3.a provides one hour to prepare for a plant shutdown.**

This ~~includes time to~~ permits the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid.

**Alternatively, LCO 3.0.3.b provides 24 hours before initiating a plant shutdown to perform repairs, prepare for an orderly plant shutdown, or to pursue regulatory relief if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**LCO 3.0.3.b may not be used if entry into LCO 3.0.3 is planned. Planned entry into LCO 3.0.3, if determined to be appropriate, is limited to the time limit in LCO 3.0.3.a.**

**LCO 3.0.3.b may be used if risk is assessed and managed. The risk assessment must consider all inoperable equipment regardless of whether the equipment is included in the normal 10 CFR 50.65(a)(4) risk assessment scope. The risk assessments will be conducted using the procedures and guidance endorsed by Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Regulatory Guide 1.160 endorses the guidance in Section 11 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." These documents address general guidance for conduct of the risk assessment, quantitative and qualitative guidelines for establishing risk management actions, and example risk management actions. These include actions to plan and conduct other activities in a manner that controls overall risk, increased risk awareness by shift and management personnel, actions to reduce the duration of the condition, actions to minimize the magnitude of risk increases (establishment of backup success paths or compensatory measures), and determination that use of the 24 hour period before initiating a shutdown is acceptable. There may be no more than**

minimal increase in risk (i.e., the level determined acceptable during normal work control levels) and no net increase in risk after implementation of risk management actions.

The use of LCO 3.0.3.b is not dependent on planned restoration of compliance with the LCO or ACTIONS within 24 hours as other actions are available, such as regulatory relief or an orderly shutdown.

To assess and manage risk, the likely cause of the conditions that resulted in LCO 3.0.3 entry should be understood. A formal cause or apparent cause evaluation is not required because of the limited time available. If the extent of condition is unknown the risk assessment should consider the increased possibility of common cause failure either numerically or through risk management actions.

The time limits in LCO 3.0.3.a and LCO 3.0.3.b begin on entry into LCO 3.0.3. The risk assessment be completed before using LCO 3.0.3.b. If LCO 3.0.3.b is entered and later the conditions for use are no longer satisfied, LCO 3.0.3.a is entered, and the one hour period begins when LCO 3.0.3 was entered. If the one hour has expired and operation is not in accordance with the LCO or ACTIONS, the requirements to enter a lower MODE begins immediately (i.e., MODE 2 must be entered within the following 6 hours). If LCO 3.0.3.a is entered and later the requirements of LCO 3.0.3.b are satisfied, the LCO 3.0.3.b period begins when LCO 3.0.3 was entered, even if a plant shutdown has begun.

The time limits specified to enter lower MODES of operation begin if operation is not in accordance with the LCO or ACTIONS within the time periods in LCO 3.0.3.a or LCO 3.0.3.b. The time limits ~~specified to enter lower MODES of operation~~ permit the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the capabilities of the unit, assuming that only the minimum required equipment is OPERABLE. This reduces thermal stresses on components of the Reactor Coolant System and the potential for a plant upset that could challenge safety systems under conditions to which this Specification applies. The use and interpretation of specified times to complete the actions of LCO 3.0.3 are consistent with the discussion of Section 1.3, Completion Times.

A unit shutdown required in accordance with LCO 3.0.3 may be terminated and LCO 3.0.3 exited if any of the following occurs:

- a. The LCO is now met,
- b. The LCO is no longer applicable,

- c. A Condition exists for which the Required Actions have now been performed, or
- d. ACTIONS exist that do not have expired Completion Times. These Completion Times are applicable from the point in time that the Condition is initially entered and not from the time LCO 3.0.3 is exited.

The time limits of LCO 3.0.3 allow ~~3637~~ hours for the unit to be in MODE 4 ~~when-after~~ a shutdown is ~~initiated required~~ during MODE 1 operation. If the unit is in a lower MODE of operation when a shutdown is required, the time limit for entering the next lower MODE applies. If a lower MODE is entered in

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### LCO 3.0.3 (continued)

less time than allowed, however, the total allowable time to enter MODE 4, or other applicable MODE, is not reduced. For example, if MODE 2 is entered in 2 hours, then the time allowed for entering MODE 3 is the next ~~1011~~ hours, because the total time for entering MODE 3 is not reduced from the allowable limit of ~~1213~~ hours. Therefore, if remedial measures are completed that would permit a return to MODE 1, a penalty is not incurred by having to enter a lower MODE of operation in less than the total time allowed.

In MODES 1, 2, and 3, LCO 3.0.3 provides actions for Conditions not covered in other Specifications. The requirements of LCO 3.0.3 do not apply in MODES 4 and 5 because the unit is already in the most restrictive Condition required by LCO 3.0.3. The requirements of LCO 3.0.3 do not apply in other specified conditions of the Applicability (unless in MODE 1, 2, or 3) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken.

Exceptions to LCO 3.0.3 are provided in instances where requiring a unit shutdown, in accordance with LCO 3.0.3, would not provide appropriate remedial measures for the associated condition of the unit. An example of this is in LCO 3.7.8, "Spent Fuel Storage Pool Water Level." LCO 3.7.8 has an Applicability of "During movement of irradiated fuel assemblies in the spent fuel storage pool." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.8 are not met while in MODE 1, 2, or 3, there is no safety benefit to be gained by placing the unit in a shutdown condition. The Required Action of LCO 3.7.8 of "Suspend movement of irradiated fuel assemblies in the spent fuel storage pool" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.

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### 3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

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LCO 3.0.1 LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2, LCO 3.0.7, LCO 3.0.8, and LCO 3.0.9.

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LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.

If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

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LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, ~~the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable.~~ **a**Action shall be initiated **to place the unit in a MODE or other specified condition in which the LCO is not applicable** within ~~1 hour to place the unit, as applicable, in:~~

**a. 1 hour; or**

**b. 24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**At the end of the 1 hour or 24 hour period:**

~~a.~~ **Be in** MODE 2 within ~~67~~ hours,

~~b.~~ **Be in** MODE 3 within ~~1243~~ hours, and

~~c.~~ **Be in** MODE 4 within ~~3637~~ hours.

Exceptions to this Specification are stated in the individual Specifications.

~~If Where~~ corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, **then** completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, and 3.

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LCO 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

- a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

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## LCO 3.0.2 (continued)

The nature of some Required Actions of some Conditions necessitates that, once the Condition is entered, the Required Actions must be completed even though the associated Conditions no longer exist. The individual LCO's ACTIONS specify the Required Actions where this is the case. An example of this is in LCO 3.4.11, "RCS Pressure and Temperature (P/T) Limits."

The Completion Times of the Required Actions are also applicable when a system or component is removed from service intentionally. The ACTIONS for not meeting a single LCO adequately manage any increase in plant risk, provided any unusual external conditions (e.g., severe weather, offsite power instability) are considered. In addition, the increased risk associated with simultaneous removal of multiple structures, systems, trains or components from service is assessed and managed in accordance with 10 CFR 50.65(a)(4). Individual Specifications may specify a time limit for performing an SR when equipment is removed from service or bypassed for testing. In this case, the Completion Times of the Required Actions are applicable when this time limit expires, if the equipment remains removed from service or bypassed.

When a change in MODE or other specified condition is required to comply with Required Actions, the unit may enter a MODE or other specified condition in which another Specification becomes applicable. In this case, the Completion Times of the associated Required Actions would apply from the point in time that the new Specification becomes applicable, and the ACTIONS Condition(s) are entered.

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## LCO 3.0.3

LCO 3.0.3 establishes the actions that must be implemented when an LCO is not met and:

- a. An associated Required Action and Completion Time is not met and no other Condition applies or
- b. The condition of the unit is not specifically addressed by the associated ACTIONS. This means that no combination of Conditions stated in the ACTIONS can be made that exactly corresponds to the actual condition of the unit. Sometimes, possible combinations of Conditions are such that entering LCO 3.0.3 is warranted; in such cases, the ACTIONS specifically state a Condition corresponding to such combinations and also that LCO 3.0.3 be entered immediately.

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## LCO 3.0.3 (continued)

This Specification delineates the time limits for placing the unit in a safe MODE or other specified condition when operation cannot be maintained within the limits for safe operation as defined by the LCO and its ACTIONS. Planned entry into LCO 3.0.3 should be avoided. If it is not practicable to avoid planned entry into LCO 3.0.3, plant risk should be assessed and managed in accordance with 10 CFR 50.65(a)(4), and the planned entry into LCO 3.0.3 should have less effect on plant safety than other practicable alternatives.

Upon entering LCO 3.0.3, ~~time 1 hour is allowed to prepare for an orderly shutdown~~ **provided in LCO 3.0.3.a and LCO 3.0.3.b** before initiating a change in unit operation.

**LCO 3.0.3.a provides one hour to prepare for a plant shutdown.** This ~~includes time to~~ permits the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid.

**Alternatively, LCO 3.0.3.b provides 24 hours before initiating a plant shutdown to perform repairs, prepare for an orderly plant shutdown, or to pursue regulatory relief if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**LCO 3.0.3.b may not be used if entry into LCO 3.0.3 is planned. Planned entry into LCO 3.0.3, if determined to be appropriate, is limited to the time limit in LCO 3.0.3.a.**

**LCO 3.0.3.b may be used if risk is assessed and managed. The risk assessment must consider all inoperable equipment regardless of whether the equipment is included in the normal 10 CFR 50.65(a)(4) risk assessment scope. The risk assessments will be conducted using the procedures and guidance endorsed by Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Regulatory Guide 1.160 endorses the guidance in Section 11 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." These documents address general guidance for conduct of the risk assessment, quantitative and qualitative guidelines for establishing risk management actions, and example risk management actions. These include actions to plan and conduct other activities in a manner that controls overall risk, increased risk awareness by shift and management personnel, actions to reduce the duration of the condition, actions to minimize the magnitude of risk increases (establishment of backup success paths or compensatory measures), and determination that use of the 24 hour period before initiating a shutdown is acceptable. There may be no more than**



minimal increase in risk (i.e., the level determined acceptable during normal work control levels) and no net increase in risk after implementation of risk management actions.

The use of LCO 3.0.3.b is not dependent on planned restoration of compliance with the LCO or ACTIONS within 24 hours as other actions are available, such as regulatory relief or an orderly shutdown.

To assess and manage risk, the likely cause of the conditions that resulted in LCO 3.0.3 entry should be understood. A formal cause or apparent cause evaluation is not required because of the limited time available. If the extent of condition is unknown the risk assessment should consider the increased possibility of common cause failure either numerically or through risk management actions.

The time limits in LCO 3.0.3.a and LCO 3.0.3.b begin on entry into LCO 3.0.3. The risk assessment be completed before using LCO 3.0.3.b. If LCO 3.0.3.b is entered and later the conditions for use are no longer satisfied, LCO 3.0.3.a is entered, and the one hour period begins when LCO 3.0.3 was entered. If the one hour has expired and operation is not in accordance with the LCO or ACTIONS, the requirements to enter a lower MODE begins immediately (i.e., MODE 2 must be entered within the following 6 hours). If LCO 3.0.3.a is entered and later the requirements of LCO 3.0.3.b are satisfied, the LCO 3.0.3.b period begins when LCO 3.0.3 was entered, even if a plant shutdown has begun.

The time limits specified to enter lower MODES of operation begin if operation is not in accordance with the LCO or ACTIONS within the time periods in LCO 3.0.3.a or LCO 3.0.3.b. The time limits ~~specified to enter lower MODES of operation~~ permit the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the capabilities of the unit, assuming that only the minimum required equipment is OPERABLE. This reduces thermal stresses on components of the Reactor Coolant System and the potential for a plant upset that could challenge safety systems under conditions to which this Specification applies. The use and interpretation of specified times to complete the actions of LCO 3.0.3 are consistent with the discussion of Section 1.3, Completion Times.

A unit shutdown required in accordance with LCO 3.0.3 may be terminated and LCO 3.0.3 exited if any of the following occurs:

- a. The LCO is now met,
- b. The LCO is no longer applicable,

- c. A Condition exists for which the Required Actions have now been performed, or
- d. ACTIONS exist that do not have expired Completion Times. These Completion Times are applicable from the point in time that the Condition is initially entered and not from the time LCO 3.0.3 is exited.

The time limits of LCO 3.0.3 allow ~~36~~37 hours for the unit to be in MODE 4 ~~when-after~~ a shutdown is ~~initiated required~~ during MODE 1 operation. If the unit is in a lower MODE of operation when a shutdown is required, the time limit for entering the next lower MODE applies. If a lower MODE is entered in less time than allowed, however, the total allowable time to enter MODE 4, or other applicable MODE, is not reduced. For example, if

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## LCO 3.0.3 (continued)

MODE 2 is entered in 2 hours, then the time allowed for entering MODE 3 is the next ~~10~~~~11~~ hours, because the total time for entering MODE 3 is not reduced from the allowable limit of ~~12~~~~13~~ hours. Therefore, if remedial measures are completed that would permit a return to MODE 1, a penalty is not incurred by having to enter a lower MODE of operation in less than the total time allowed.

In MODES 1, 2, and 3, LCO 3.0.3 provides actions for Conditions not covered in other Specifications. The requirements of LCO 3.0.3 do not apply in MODES 4 and 5 because the unit is already in the most restrictive Condition required by LCO 3.0.3. The requirements of LCO 3.0.3 do not apply in other specified conditions of the Applicability (unless in MODE 1, 2, or 3) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken.

Exceptions to LCO 3.0.3 are provided in instances where requiring a unit shutdown, in accordance with LCO 3.0.3, would not provide appropriate remedial measures for the associated condition of the unit. An example of this is in LCO 3.7.7, "Fuel Pool Water Level." LCO 3.7.7 has an Applicability of "During movement of irradiated fuel assemblies in the associated fuel storage pool." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.7 are not met while in MODE 1, 2, or 3, there is no safety benefit to be gained by placing the unit in a shutdown condition. The Required Action of LCO 3.7.7 of "Suspend movement of irradiated fuel assemblies in the associated fuel storage pool(s)" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.

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LCO 3.0.4

LCO 3.0.4 establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It allows placing the unit in a MODE or other specified condition stated in that Applicability (e.g., the Applicability desired to be entered) when unit conditions are such that the requirements of the LCO would not be met, in accordance with either LCO 3.0.4.a, LCO 3.0.4.b, or LCO 3.0.4.c.

LCO 3.0.4.a allows entry into a MODE or other specified condition in the Applicability with the LCO not met when the associated ACTIONS to be entered following entry into the MODE or other specified condition in the Applicability will permit continued operation within the MODE or other specified condition for an unlimited period of time. Compliance with ACTIONS that permit continued operation of the unit for an unlimited period of time in a MODE or other specified condition provides an acceptable level of safety for continued operation. This is without regard

### 3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

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LCO 3.0.1 LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2 and LCO 3.0.7.

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LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.

If the LCO is met, or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

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LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, ~~the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable.~~ **a**Action shall be initiated **to place the unit in a MODE or other specified condition in which the LCO is not applicable** within ~~1 hour to place the unit, as applicable, in:~~

**a. 1 hour; or**

**b. 24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**At the end of the 1 hour or 24 hour period:**

~~a.~~ **Be in** MODE 3 within ~~67~~ hours; and

~~b.~~ **Be in** MODE 4 within ~~1243~~ hours; and

~~c.~~ **Be in** MODE 5 within ~~3637~~ hours.

Exceptions to this Specification are stated in the individual Specifications.

~~If Where~~ corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, **then** completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.

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LCO 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This

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## LCO 3.0.3

LCO 3.0.3 establishes the actions that must be implemented when an LCO is not met, and:

- a. An associated Required Action and Completion Time is not met and no other Condition applies; or
- b. The condition of the unit is not specifically addressed by the associated ACTIONS. This means that no combination of Conditions stated in the ACTIONS can be made that exactly corresponds to the actual condition of the unit. Sometimes, possible combinations of Conditions are such that entering LCO 3.0.3 is warranted; in such cases, the ACTIONS specifically state a Condition corresponding to such combinations and also that LCO 3.0.3 be entered immediately.

This Specification delineates the time limits for placing the unit in a safe MODE or other specified condition when operation cannot be maintained within the limits for safe operation as defined by the LCO and its ACTIONS. It is not intended to be used as an operational convenience that permits routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable.

Upon entering LCO 3.0.3, ~~time 1 hour is allowed to prepare for an orderly shutdown provided in LCO 3.0.3.a and LCO 3.0.3.b~~ before initiating a change in unit operation.

**LCO 3.0.3.a provides one hour to prepare for a plant shutdown.** This ~~includes time to~~ permits the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid.

**Alternatively, LCO 3.0.3.b provides 24 hours before initiating a plant shutdown to perform repairs, prepare for an orderly plant shutdown, or to pursue regulatory relief if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**LCO 3.0.3.b may not be used if entry into LCO 3.0.3 is planned. Planned entry into LCO 3.0.3, if determined to be appropriate, is limited to the time limit in LCO 3.0.3.a.**

**LCO 3.0.3.b may be used if risk is assessed and managed. The risk assessment must consider all inoperable equipment regardless of whether the equipment is included in the normal 10 CFR 50.65(a)(4) risk assessment scope. The risk assessments will be conducted using the procedures and guidance endorsed by Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear**

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Power Plants." Regulatory Guide 1.160 endorses the guidance in Section 11 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." These documents address general guidance for conduct of the risk assessment, quantitative and qualitative guidelines for establishing risk management actions, and example risk management actions. These include actions to plan and conduct other activities in a manner that controls overall risk, increased risk awareness by shift and management personnel, actions to reduce the duration of the condition, actions to minimize the magnitude of risk increases (establishment of backup success paths or compensatory measures), and determination that use of the 24 hour period before initiating a shutdown is acceptable. There may be no more than minimal increase in risk (i.e., the level determined acceptable during normal work control levels) and no net increase in risk after implementation of risk management actions.

The use of LCO 3.0.3.b is not dependent on planned restoration of compliance with the LCO or ACTIONS within 24 hours as other actions are available, such as regulatory relief or an orderly shutdown.

To assess and manage risk, the likely cause of the conditions that resulted in LCO 3.0.3 entry should be understood. A formal cause or apparent cause evaluation is not required because of the limited time available. If the extent of condition is unknown the risk assessment should consider the increased possibility of common cause failure either numerically or through risk management actions.

The time limits in LCO 3.0.3.a and LCO 3.0.3.b begin on entry into LCO 3.0.3. The risk assessment be completed before using LCO 3.0.3.b. If LCO 3.0.3.b is entered and later the conditions for use are no longer satisfied, LCO 3.0.3.a is entered, and the one hour period begins when LCO 3.0.3 was entered. If the one hour has expired and operation is not in accordance with the LCO or ACTIONS, the requirements to enter a lower MODE begins immediately (i.e., MODE 3 must be entered within the following 6 hours). If LCO 3.0.3.a is entered and later the requirements of LCO 3.0.3.b are satisfied, the LCO 3.0.3.b period begins when LCO 3.0.3 was entered, even if a plant shutdown has begun.

The time limits specified to enter lower MODES of operation begin if operation is not in accordance with the LCO or ACTIONS within the time periods in LCO 3.0.3.a or LCO 3.0.3.b. The time limits ~~specified to reach lower MODES of operation~~ permit the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the capabilities of the unit. This reduces thermal

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stresses on components of the Reactor Coolant System and the potential for a plant upset that could challenge safety systems under conditions to which this Specification applies. The use and interpretation of specified times to complete the actions of LCO 3.0.3 are consistent with the discussion of Section 1.3, "Completion Times."

A unit shutdown required in accordance with LCO 3.0.3 may be terminated and LCO 3.0.3 exited if any of the following occurs:

- a. The LCO is now met;
- b. The LCO is no longer applicable,**
- cb.** A Condition exists for which the Required Actions have now been performed; or

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### LCO 3.0.3 (continued)

- de.** ACTIONS exist that do not have expired Completion Times. These Completion Times are applicable from the point in time that the Condition was initially entered and not from the time LCO 3.0.3 is exited.

The time limits of LCO 3.0.3 allow **3637** hours for the unit to be in MODE 5 ~~when-after~~ a shutdown is ~~initiated required~~ during MODE 1 operation. If the unit is in a lower MODE of operation when a shutdown is required, the time limit for ~~reaching-entering~~ the next lower MODE applies. If a lower MODE is ~~reached-entered~~ in less time than allowed, however, the total allowable time to ~~reach-enter~~ MODE 5, or other applicable MODE is not reduced. For example, if MODE 3 is ~~reached-entered~~ in 2 hours, then the time allowed for ~~reaching-entering~~ MODE 4 is the next **1044** hours, because the total time for ~~reaching-entering~~ MODE 4 is not reduced from the allowable limit of **1243** hours. Therefore, if remedial measures are completed that would permit a return to MODE 1, a penalty is not incurred by having to ~~reach-enter~~ a lower MODE of operation in less than the total time allowed. Compliance with the time limits of Specification 3.0.3 may rely on the use of nonsafety-related systems, which are not governed by Technical Specification LCOs.

In MODES 1, 2, 3, and 4, LCO 3.0.3 provides actions for Conditions not covered in other Specifications. The requirements of LCO 3.0.3 do not apply in other specified conditions of the Applicability (unless in MODE 1, 2, 3, or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken. The requirements of

LCO 3.0.3 do not apply in MODES 5 and 6 because the unit is already in the most restrictive condition required by LCO 3.0.3.

Exceptions to LCO 3.0.3 are provided in instances where requiring a unit shutdown, in accordance with LCO 3.0.3, would not provide appropriate remedial measures for the associated condition of the unit. An example of this is in LCO 3.7.5, Spent Fuel Pool Water Level. This Specification has an Applicability of "At all times." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.5 are not met while in MODE 1, 2, or 3, there is no safety benefit to be gained by placing the unit in a shutdown condition. The Required Action of LCO 3.7.5 of "Suspend movement of irradiated fuel assemblies in the spent fuel pool" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.