

## Technical Specifications Task Force Improved Standard Technical Specifications Change Traveler

### Revise LCO 3.0.3

NUREGs Affected:  1430  1431  1432  1433  1434  2194

Classification: 1) Technical Change

Recommended for CLIP?: Yes

Correction or Improvement: Improvement

NRC Fee Status: Not Exempt

Benefit: Avoids a Plant Shutdown

Changes Marked on ISTS Rev 5.0

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

See attached.

### Revision History

#### OG Revision 0

**Revision Status: Active**

Revision Proposed by: PWROG

Revision Description:  
Original Issue

#### Owners Group Review Information

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Owners Group Comments  
(No Comments)

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#### TSTF Review Information

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TSTF Comments:  
(No Comments)

TSTF Resolution: Approved

Date: 05-Apr-21

### Affected Technical Specifications

LCO 3.0.3

LCO Applicability

LCO 3.0.3 Bases

LCO Applicability

Action 3.8.9.E

Distribution Systems - Operating

NUREG(s)- 1430 1431 1432 Only

Action 3.8.9.E Bases

Distribution Systems - Operating

NUREG(s)- 1430 1431 1432 Only

Action 3.8.9.F

Distribution Systems - Operating

NUREG(s)- 1433 1434 Only

06-Apr-21

DRAFT

PWROG-9, Rev. 0

TSTF-585, Rev. 0

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Action 3.8.9.F Bases	Distribution Systems - Operating	NUREG(s)- 1433 1434 Only
Action 3.8.5.F	Distribution Systems - Operating	NUREG(s)- 2194 Only
Action 3.8.5.F Bases	Distribution Systems - Operating	NUREG(s)- 2194 Only

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06-Apr-21

## 1. SUMMARY DESCRIPTION

The proposed change revises Limiting Condition for Operation (LCO) 3.0.3 to provide additional time under specific circumstances to perform repairs, prepare for a plant shutdown, or to request relief from the NRC before initiating a plant shutdown. The proposed change also evaluates Technical Specifications (TS) Required Actions that direct entry into LCO 3.0.3 and proposes changes to the "Distribution Systems - Operating" specification. 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. Background

LCO 3.0.3 requires a plant shutdown under three conditions:

1. An LCO is not met and the associated Actions are not met;
2. An LCO is not met and an associated Action is not provided; or
3. An LCO is not met and LCO 3.0.3 entry is directed by the associated Actions.

LCO 3.0.3 requires initiation of actions to shut down the plant within one hour if any of the conditions are met without regard to the safety significance of the issue that resulted in LCO 3.0.3 entry.

The proposed change will revise LCO 3.0.3 to permit a 24 hour delay before initiation of a plant shutdown under certain circumstances to permit licensees time to perform repairs, prepare for an orderly shutdown, or request relief from the NRC.

### 2.2. 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

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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 some cases, 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.

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.

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]<sup>2</sup> 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.

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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.

Some TS Actions direct entry into LCO 3.0.3. The following specifications explicitly require entering LCO 3.0.3 in the stated Condition with a Completion Time of "Immediately":

<b>TS Number</b>	<b>NUREG</b>	<b>TS Title</b>	<b>Condition</b>
3.4.15 3.4.15 3.4.15 3.4.6 3.4.7 3.4.9	1430 1431 1432 1433 1434 2194	RCS Leakage Detection Instrumentation	All required leakage detection monitors are inoperable
3.5.1	1430	Core Flood Tanks	Both required Core Flood Tanks are inoperable
3.5.1	1431 2194	Accumulators	Two or more accumulators are inoperable.
3.5.1	1432	Safety Injection Tanks (SITs)	Two or more SITs are inoperable.
3.5.1	1433	ECCS – Operating	Two or more low pressure ECCS injection/spray subsystems are inoperable for reasons other than one inoperable LPCI pump in both LPCI subsystems, or HPCI System and one or more ADS valves are inoperable.
3.5.1	1434	ECCS – Operating	HPCS and low pressure core spray (LPCS) are inoperable, or three or more ECCS injection/spray subsystems are inoperable, or HPCS System and one or more ADS valves are inoperable, or two or more ECCS injection/spray subsystems and one or more ADS valves are inoperable.
3.5.2	1430 1431 1432	ECCS – Operating	Less than 100% of the ECCS flow equivalent to a single OPERABLE train available
3.6.4.3 <sup>3</sup>	1433 1434	Standby Gas Treatment (SGT) System	Two SGT subsystems inoperable in Mode 1, 2 or 3.
3.6.6 3.6.6A & B 3.6.6A & B	1430 1431 1432	Containment Spray and Cooling System	Two containment spray trains or any combination of three or more trains are inoperable.

TS Number	NUREG	TS Title	Condition
3.6.6E	1431	Recirculation Spray (RS) System	Three or more RS subsystems are inoperable
3.7.3 <sup>3</sup>	1434	Control Room Fresh Air System	Two CRFA subsystems inoperable in Mode 1, 2, or 3 for reasons other than an inoperable control room boundary.
3.7.4 <sup>3</sup>	1433	Main Control Room Environmental Control System	Two MCREC subsystems inoperable in Mode 1, 2, or 3 for reasons other than an inoperable control room boundary.
3.7.5 <sup>3</sup> 3.7.4 <sup>3</sup>	1433 1434	Control Room AC System	Two control room AC subsystems inoperable in Mode 1, 2, or 3.
3.7.10	1430	Control Room Emergency Ventilation System (CREVS)	Two CREVS trains are inoperable in Modes 1, 2, 3, or 4 for reasons other than an inoperable control room boundary
3.7.10	1431	Control Room Emergency Filtration System (CREFS)	Two CREFS trains are inoperable in Modes 1, 2, 3, or 4 for reasons other than an inoperable control room boundary
3.7.11	1430 1431	Control Room Emergency Air Temperature Control System (CREATCS)	Two CREATCS trains are inoperable in Modes 1, 2, 3 or 4
3.8.1	1430 1431 1432 1433 1434	AC Sources – Operating	Three or more required AC sources are inoperable
3.8.5	2194	Distribution Systems – Operating	Two inoperable divisions that result in a loss of safety function.

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<sup>3</sup> These Required Actions to enter LCO 3.0.3 were replaced by TSTF-423, "Technical Specifications End States, NEDC-32988-A," approved February 18, 2011. To accommodate plants that have not adopted TSTF-423, retaining these Required Actions is discussed in the Technical Evaluation.

TS Number	NUREG	TS Title	Condition
3.8.9	1430 1431 1432 1433 1434	Distribution Systems – Operating	Two or more electrical power distribution systems are inoperable that result in a loss of function.

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

An immediate plant shutdown as required by LCO 3.0.3 could result in an unnecessary transient without a corresponding health and safety benefit. 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 preparation of an orderly shutdown. Only one of the TS Conditions that invoke LCO 3.0.3, the "Distribution Systems - Operating" specification, affects the normal operation of the plant. That specification is proposed to be revised to require a plant shutdown instead of invoking LCO 3.0.3.

The proposed revision to LCO 3.0.3 will provide additional time in some circumstances to restore compliance with the affected LCOs, prepare for an orderly plant shutdown, or, if justified, to request NRC approval of additional time to restore compliance.

### **2.4. Description of the Proposed Change**

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 shall be initiated within 1 hour to place the unit, as applicable, in:~~ *corrective measures shall be completed that permit operation in accordance with the LCO or ACTIONS within:*
- a.    *1 hour; or*
  - b.    *24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.*

*If at the end of the specified period operation is not in accordance with the LCO or ACTIONS:*

*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, 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 shall be initiated within 1 hour to place the unit, as applicable, in:~~ *corrective measures shall be completed that permit operation in accordance with the LCO or ACTIONS within:*

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

*If at the end of the specified period operation is not in accordance with the LCO or ACTIONS:*

*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, 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.

Other Changes

PWR and BWR TS 3.8.9, "Distribution Systems - Operating," and AP1000 TS 3.8.5 of the same title are revised to no longer reference LCO 3.0.3 and to always require a plant shutdown when two or more electrical distribution trains or divisions are inoperable that result in a loss of function.

NUREG-1430 through NUREG-1432 TS 3.8.9

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two or more electrical power distribution subsystems inoperable that result in a loss of [safety] function.	<del>E.1 Enter LCO 3.0.3.</del>	<del>Immediately</del>
	<i>E.1 Be in MODE 3.</i>	<i>6 hours</i>
	<u>AND</u> <i>E.2 Be in MODE 5.</i>	<i>36 hours</i>

The Condition in NUREG-1432 contains the word "safety" in the Condition. NUREG-1430 and NUREG-1431 do not. The intent is the same.

NUREG-2194 TS 3.8.5

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two inoperable divisions that result in a loss of safety function.	<del>F.1 Enter LCO 3.0.3.</del>	<del>Immediately</del>
	<i>F.1 Be in MODE 3.</i>	<i>6 hours</i>
	<u>AND</u> <i>F.2 Be in MODE 5.</i>	<i>36 hours</i>

NUREG-1433 and NUREG-1434 TS 3.8.9

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two or more electrical power distribution subsystems inoperable that result in a loss of function.	<del>F.1 Enter LCO 3.0.3.</del>	Immediately
	F.1 Be in MODE 3.	12 hours
	<u>AND</u> F.2 Be in MODE 4.	36 hours

The TS Bases are revised to reflect these changes. 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.

The NUREG-2194 LCO 3.0.3 Bases are 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

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

### **3. TECHNICAL EVALUATION**

#### **3.1. Background**

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.

LCO 3.0.3 is intended to impose time limits for placing the unit in a safe condition when operation cannot be maintained within the limits for operation as defined by the LCOs and Actions. Originally, LCO 3.0.3 required PWRs to be in Hot Standby within 1 hour and BWRs to be in Hot Shutdown within 6 hours. Generic Letter 80-30 revised the TS to provide an hour to prepare for the shutdown and for PWRs to be in Hot Standby in the following 6 hours and for BWRs to be in Startup in the next 6 hours. The Bases stated that the one hour delay was to prepare for an orderly shutdown and to coordinate with the load dispatcher to ensure the stability of the electrical grid.

Nuclear plant operators are trained to perform a rapid plant shutdown and practice such shutdowns in plant simulators. 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. Current industry capacity factors are very high (> 92%), and it is common for plants to operate from refueling outage to refueling outage without a shutdown. As a result, immediate plant shutdowns are infrequent evolutions and licensees typically implement additional administrative requirements to minimize the risk from infrequent evolutions. These additional administrative actions may not be possible in the abbreviated time provided by LCO 3.0.3.

In the same ten-year period, 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 given additional time to resolve the condition, initiation of a plant transient can frequently be avoided.

A plant shutdown under LCO 3.0.3 is also time-critical in that a major plant evolution must be initiated within one hour. Initiation of a plant shutdown includes many activities, such as stopping maintenance and testing and restoring systems, or planning for a shutdown with unavailable systems. Experience indicates 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...

The goal of the proposed change is to avoid 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 delay provided by LCO 3.0.3. However, pursuing such relief during the proposed 24-hour period is possible, in parallel with efforts to correct the condition and to prepare for an orderly shutdown.

### **3.2. Structural Changes to LCO 3.0.3**

The proposed change provides an alternative to the current 1 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 restructuring 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 beginning a shutdown is used.

The LCO 3.0.3 first paragraph is revised to improve the clarity of the requirement. 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." This phrase is unnecessary as LCO 3.0.3 directs entry into various Modes, and completion of the LCO 3.0.3 actions is not required if corrective measures are completed that permit operation in accordance with the LCO or ACTIONS. This phrase is replaced with a clearer action, "corrective measures shall be completed that permit operation in accordance with the LCO or ACTIONS." The proposed wording is consistent with the existing penultimate paragraph of LCO 3.0.3.

The revised LCO 3.0.3 retains the current 1 hour allowance to prepare for a shutdown as LCO 3.0.3.a and adds an alternative time as LCO 3.0.3.b that states, "24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed." The provisions of LCO 3.0.3.b are discussed below.

The proposed change states, "If at the end of the specified period operation is not in accordance with the LCO or ACTIONS." This change delineates the initiation of the times for being in the specified Modes and is consistent with the proposed first paragraph and the existing penultimate paragraph in LCO 3.0.3. The phrase "at the end of the specified period" is used in the current LCO 3.0.8 and LCO 3.0.9.

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).

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

The use of the 24 hour provision 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 an emergent condition results 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 time to prepare in LCO 3.0.3.a.

### **3.2.2. 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 (Snubbers),
- LCO 3.0.9 (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. 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 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. 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. Consideration should also be given to the probability of completing restoration such that LCO 3.0.3 will no longer be applicable prior to the expiration of the 24 hour period. 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.

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 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.

#### 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.

#### **3.2.3. Justification for LCO 3.0.3.b 24 Hour Period**

The proposed 24 hour period before beginning a plant shutdown under LCO 3.0.3.b is based on accomplishing one or more of three goals, which may 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 includes 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 simulator staff to support simulator exercises, familiarization of the simulator staff with the situation, and preparation of training scenarios.
- Conduct simulator training scenarios to prepare the crew for the shutdown considering the current plant condition, such as 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 receive training.
- Coordinate with the load dispatcher to replace the generation, which is more complex with today's multiple supplier grids.

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 time constraints before a plant shutdown transient is initiated. However, the proposed 24 hour period would provide time for the licensee and NRC staff to consider enforcement discretion or an emergency license amendment under the provisions of 10 CFR 50.91(a)(5) if the proposed conditions are satisfied.

It should be noted that other TS Actions or automatic protective actions could initiate a plant shutdown while in LCO 3.0.3.

#### **3.2.4. Selection 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. It is 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. It is also 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. In both 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. In that case, a PWR unit must be in Mode 3 within the next 6 hours and a BWR unit must be in Mode 2 in [6] hours. If moving from LCO 3.0.3.a to

LCO 3.0.3.b, the 24 hour 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 for an orderly shutdown.

### **3.3. Change to "Distribution Systems - Operating"**

The "Distribution Systems - Operating" LCO requires two trains or divisions of Alternating Current (AC), Direct Current (DC), or AC vital bus electrical power distribution subsystems to be operable. An AC, DC, or AC vital bus electrical power distribution subsystem is operable if the associated buses, load centers, motor control centers, and distribution panels are energized to their proper voltages. When two or more electrical power distribution subsystems are inoperable that result in a loss of safety function, the remaining AC, DC, or AC vital bus electrical power distribution subsystems are no longer capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition. Therefore, an immediate plant shutdown is required. The Required Action to enter LCO 3.0.3 is replaced with a requirement to immediately shutdown the plant. In the PWR STS, this requires placing the unit in Mode 3 within 6 hours and Mode 5 within 36 hours. In the BWR STS, this requires placing the unit in Mode 3 within 12 hours and in Mode 4 within 36 hours. The BWR LCO 3.0.3 requirement to be in Mode 2 within [6] hours is not included for consistency with TS Section 1.3, Example 1.3-1.

### **3.4. Justification for Retaining Other LCO 3.0.3 References**

#### **3.4.1. RCS Leakage Detection Instrumentation**

In the Condition in which all required leakage detection monitors are inoperable, the proposed change would permit 24 hours, if the proposed restrictions are met, to resolve the condition before requiring actions to shut down the unit. The extension is reasonable given the compensatory measures required by the TS, such as Reactor Coolant System (RCS) inventory balances, containment atmosphere grab samples, as well as other indications of RCS integrity such as makeup tank levels and changes in primary containment temperature. If the plant risk is assessed and managed, permitting 24 hours to restore at least one RCS leakage detection instrument before initiating a shutdown is reasonable.

#### **3.4.2. Core Flood Tanks (CFTs), Accumulators, and Safety Injection Tanks (SITs)**

In the Condition in which two or more CFTs, Accumulators, or SITs are inoperable, the proposed change would permit 24 hours, if the proposed restrictions are met, to resolve the condition before requiring actions to shut down the unit. The extension is reasonable given the passive nature of the CFTs, Accumulators, and SITs. It is likely that an inoperable component can perform the assumed function but at a reduced level, such as less water in the tanks, a lower boron concentration, or the temperature outside the assumed range. Also, the CFTs, Accumulators, and SITs are only credited in the large and small break loss-of-coolant accidents (LOCAs), which are very low probability events. Therefore, permitting 24 hours to restore one or more components to operable status, if the proposed LCO 3.0.3.b restrictions are met, is reasonable and avoids the risks associated with a plant shutdown.



In the B&W STS (NUREG-1430), the Actions are different because the B&W design has only two CFTs. The Action for one inoperable CFT for reasons other than boron concentration not within limit is to restore it within 1 hour before requiring a shutdown. The one hour to restore is consistent with the LCO 3.0.3 1 hour to prepare for a plant shutdown. Therefore, the condition for "One CFT inoperable for reasons other than Condition A," and "Two CFTs inoperable" are combined and the Required Action is to enter LCO 3.0.3 immediately. If the proposed restrictions in LCO 3.0.3.b are not applicable, there is no change to the Actions. If the proposed LCO 3.0.3.b restrictions can be met, then 24 hours is reasonable to restore one or two CFTs. Note that the Westinghouse and Combustion Engineering STS currently provide 24 hours to restore one Accumulator or SIT inoperable for reasons other than boron concentration.

### **3.4.3. ECCS - Operating**

The ECCS - Operating TS requires entering LCO 3.0.3 when the ECCS cannot perform its function without assuming any additional failures. Under the proposed change, the TS would permit 24 hours, if the proposed restrictions are met, to resolve the condition before requiring actions to shut down the unit. The ECCS is a standby system, and its inoperability would not affect the stable operation of the plant at full power. The ECCS is a complex system consisting of redundant high and low pressure subsystems, pumps, and valves, and the reasons why the ECCS may be inoperable are diverse. If the plant risk is assessed and managed, permitting 24 hours to restore sufficient capability to exit LCO 3.0.3 before initiating a shutdown is reasonable. Also, the low pressure components of the ECCS may also be used for decay heat removal during shutdown. Requiring an immediate plant shutdown to a condition that could require the use of an inoperable decay heat removal system may be unwarranted if the system can be restored to operable status within the allowed timeframe.

### **3.4.4. Standby Gas Treatment (SGT) System**

For plants that have not adopted TSTF-423, the SGT System TS requires entering LCO 3.0.3 if two SGT subsystems are inoperable in Mode 1, 2 or 3. The function of the SGT System is to ensure that radioactive materials that leak from the primary containment into the secondary containment following a DBA are filtered and adsorbed prior to exhausting to the environment. The limiting events for the SGT system are a LOCA and a fuel handling accident. The SGT System is a standby system, and its inoperability would not affect the stable operation of the plant at full power. The SGT System is a complex system consisting of redundant fans, dampers, filters, as well as doors and barriers. As a result, the reasons why the SGT System may be inoperable are diverse. If the plant risk is assessed and managed, permitting 24 hours to restore at least one SGT System in order to exit LCO 3.0.3 before initiating a shutdown is reasonable.

### **3.4.5. Containment Spray and Cooling System and Westinghouse Plant Recirculation Spray (RS) System**

The Containment Spray and Cooling System TS requires entering LCO 3.0.3 if three or more Containment Spray or Cooling Systems are inoperable. For plants that credit containment spray for iodine removal, LCO 3.0.3 must be entered if both spray trains are inoperable. For Westinghouse plants with an RS spray system, LCO 3.0.3 must be entered if three or more RS

subsystems are inoperable. The limiting events that credit the Containment Spray, Containment Cooling, or Recirculation Spray systems are a LOCA and an in-containment steam line break (SLB), both of which are low-probability events. The Containment Spray, Containment Cooling, or Recirculation Spray systems are standby systems, and their inoperability would not affect the stable operation of the plant at full power. These are complex systems with spray headers, cooling fans, heat exchangers, pumps, and valves, and the reasons why the systems may be inoperable are diverse. If the plant risk is assessed and managed, permitting 24 hours to restore sufficient capability to exit LCO 3.0.3 before initiating a shutdown is reasonable.

#### **3.4.6. Control Room Emergency Ventilation System (CREVS), Control Room Emergency Filtration System (CREFS), Control Room Fresh Air (CRFA) System, Main Control Room Environmental Control (MCREC) System**

The PWR CREVS and CREFS TS and, for BWR plants that have not adopted TSTF-423, the BWR CRFA System and MCREC System TS require entering LCO 3.0.3 if both required trains or subsystems are inoperable for any reason other than an inoperable boundary. If both CREVS or CREFS trains or CRFA or MCREC subsystems are inoperable due to an inoperable boundary, 24 hours is already allowed to verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits and, if confirmed, 90 days is provided to restore the boundary. If the plant risk is assessed and managed, permitting 24 hours to restore sufficient capability to exit LCO 3.0.3 before initiating a shutdown is reasonable, particularly since the condition is no more severe than the existing TS allowance of 24 hours to verify that the control room occupants are protected or to restore an inoperable boundary.

#### **3.4.7. Control Room Emergency Air Temperature Control System (CREATCS) and Control Room AC System**

The PWR CREATCS TS requires entering LCO 3.0.3 if both required trains are inoperable while in Modes 1, 2, 3, or 4. For BWR plants that have not adopted TSTF-423, the Control Room AC System requires entering LCO 3.0.3 if two control room AC subsystems are inoperable in Mode 1, 2, or 3. The CREATCS and Control Room AC System are not explicitly assumed in any design basis accidents or transients, but are needed to maintain control room temperature. A single CREATCS train or Control Room AC subsystem can provide the required cooling. Depending on the plant design, the CREATCS and Control Room AC System may be a standby system or part of the normal control room cooling system. In either case, there are procedures for loss of all control room cooling developed to respond to a station blackout condition. The CREATCS and Control Room AC System consist of fans, heating and cooling coils, instrumentation, and controls and the reasons why a train or subsystem may be considered inoperable are diverse. If the plant risk is assessed and managed, permitting 24 hours to restore sufficient capability to exit LCO 3.0.3 before initiating a shutdown is reasonable.

#### **3.4.8. AC Sources – Operating**

If three or more of the required AC sources of two diesel generators (DGs) and two offsite circuits are inoperable, LCO 3.0.3 is required to be entered. If both offsite circuits are inoperable, a plant trip is likely. However, if the unit continues to operate in this condition (for example, if two DGs and one offsite circuit are inoperable), requiring an immediate plant

shutdown and removal of the main generator as a power source should be avoided. If the plant risk is assessed and managed, permitting 24 hours to restore sufficient capability to exit LCO 3.0.3 before initiating a shutdown is reasonable. Additionally, the emergency DGs are standby equipment, and their inoperability would not affect the stable operation of the plant at full power. The proposed change does not alter the existing TS Actions that require restoring at least one of two inoperable DGs within 2 hours. If an offsite circuit and DG are both inoperable, the TS requires one to be restored within 12 hours.

### **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**

Section IV, "The Commission Policy," of the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (58 Federal Register 39132), dated July 22, 1993, states in part:

The purpose of Technical Specifications is to impose those conditions or limitations upon reactor operation necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety by identifying those features that are of controlling importance to safety and establishing on them certain conditions of operation which cannot be changed without prior Commission approval.

...[T]he Commission will also entertain requests to adopt portions of the improved STS, even if the licensee does not adopt all STS improvements.

...The Commission encourages all licensees who submit Technical Specification related submittals based on this Policy Statement to emphasize human factors principles.

...In accordance with this Policy Statement, improved STS have been developed and will be maintained for [BWR designs]. The Commission encourages licensees to use the improved STS as the basis for plant-specific Technical Specifications.

...[I]t is the Commission intent that the wording and Bases of the improved STS be used ... to the extent practicable.

As described in the Commission's policy statement, recommendations were made by NRC and industry groups for new STS that include greater emphasis on human factors principles in order to add clarity and understanding to the text of the STS, and provide improvements to the Bases of STS, which provides the purpose for each requirement in the specification. Improved vendor-specific STS were developed and issued by the NRC in September 1992.

The regulation at Title 10 of the Code of Federal Regulations (10 CFR) Section 50.36(a)(1) requires an applicant for an operating license to include in the application proposed TS in accordance with the requirements of 10 CFR 50.36. The applicant must include in the

application a "summary statement of the bases or reasons for such specifications, other than those covering administrative controls...." However, per 10 CFR 50.36(a)(1), these technical specification bases "shall not become part of the technical specifications." The Final Policy Statement provides the following description of the scope and the purpose of the Technical Specification Bases:

Appropriate Surveillance Requirements and Actions should be retained for each LCO [limiting condition for operation] which remains or is included in the Technical Specifications. Each LCO, Action, and Surveillance Requirement should have supporting Bases. The Bases should at a minimum address the following questions and cite references to appropriate licensing documentation (e.g., FSAR, Topical Report) to support the Bases.

1. What is the justification for the Technical Specification, i.e., which Policy Statement criterion requires it to be in the Technical Specifications?

LCO 3.0.3 is an application rule and does not satisfy a 10 CFR 50.36(c)(2)(ii) criterion. The 10 CFR 50.36(c)(2)(ii) criteria do not apply to the TS Actions.

2. What are the Bases for each LCO, i.e., why was it determined to be the lowest functional capability or performance level for the system or component in question necessary for safe operation of the facility and, what are the reasons for the Applicability of the LCO?

LCO 3.0.3 is an application rule and does not represent a lowest function capability or performance level. The Actions of the "Distribution Systems - Operating," specification do not alter the LCO. Neither change affects the Applicability of the LCO.

3. What are the Bases for each Action, i.e., why should this remedial action be taken if the associated LCO cannot be met; how does this Action relate to other Actions associated with the LCO; and what justifies continued operation of the system or component at the reduced state from the state specified in the LCO for the allowed time period?

The proposed revises the Actions to be taken under LCO 3.0.3 and revises the "Distribution Systems - Operating," Actions to require a plant shutdown in lieu of entering LCO 3.0.3. The Bases are revised to discuss why those actions are the appropriate remedial actions to be taken if the associated LCO is not met and, in the case of LCO 3.0.3, why permitting continued operation in some circumstances for a limited period is acceptable.

4. What are the Bases for each Safety Limit?

The proposed change does not affect any Safety Limits or their associated Bases.

5. What are the Bases for each Surveillance Requirement and Surveillance Frequency; i.e., what specific functional requirement is the surveillance designed to verify? Why is this surveillance necessary at the specified frequency to assure that the system or component function is maintained, that facility operation will be within the Safety Limits, and that the LCO will be met?

The proposed change does not affect any Surveillance Requirements or their associated Bases.

Note: In answering these questions the Bases for each number (e.g., Allowable Value, Response Time, Completion Time, Surveillance Frequency), state, condition, and definition (e.g., operability) should be clearly specified. As an example, a number might be based on engineering judgment, past experience, or PSA [probabilistic safety assessment] insights; but this should be clearly stated.

Additionally, 10 CFR 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.

The categories of items required to be in the TS are provided in 10 CFR 50.36(c). As required by 10 CFR 50.36(c)(2)(i), the TS will include LCOs, which are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Per 10 CFR 50.36(c)(2)(i), when an LCO of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TS until the condition can be met.

The regulation at 10 CFR 50.36(c)(3) requires TS to include items in the category of SRs, which are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met.

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.

The NRC staff's guidance for the review of TS is in Chapter 16, "Technical Specifications," of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants" (SRP), dated March 2010 (ADAMS Accession No. ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared STS for each of the light-water reactor nuclear designs.

In conclusion, based on the considerations discussed above, the proposed revision does not alter the current manner of operation and (1) there is reasonable assurance that the health and safety of the public will not be endangered by continued 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, "Revise LCO 3.0.3"

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, "Revise LCO 3.0.3," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] TS. TSTF-585 revises Limiting Condition for Operation (LCO) 3.0.3 to provide additional time under specific circumstances to perform repairs, prepare for a plant shutdown, or to request relief from the NRC before initiating a plant shutdown. The proposed change also revises the "Distribution Systems - Operating" Actions to require a plant shutdown instead of directing entry into LCO 3.0.3.

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, "Revise LCO 3.0.3," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] Technical Specifications (TS). TSTF-585 revises Limiting Condition for Operation (LCO) 3.0.3 to provide additional time under specific circumstances to perform repairs, prepare for a plant shutdown, or to request relief from the NRC before initiating a plant shutdown. The proposed change also revises the "Distribution Systems - Operating" Actions to require a plant shutdown instead of directing entry into LCO 3.0.3.

## 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, "Revise LCO 3.0.3," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] Technical Specifications (TS). TSTF-585 revises Limiting Condition for Operation (LCO) 3.0.3 to provide

additional time under specific circumstances to perform repairs, prepare for a plant shutdown, or to request relief from the NRC before initiating a plant shutdown. The proposed change also revises the "Distribution Systems - Operating" Actions to require a plant shutdown instead of directing entry into LCO 3.0.3.

[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 also revises a Required Action that directs entry into LCO 3.0.3 to require 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 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 extended 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 also revises a Required Action that directs entry into LCO 3.0.3 to require 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 also revises a Required Action that directs entry into LCO 3.0.3 to require 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.

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, **corrective measures shall be completed that permit operation in accordance with the LCO or ACTIONS within: 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. **1 hour; or**
- b. **24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**If at the end of the specified period operation is not in accordance with the LCO or ACTIONS:**

- a. ~~Be in~~ **Be in** MODE 3 within ~~67~~ hours,
- b. ~~Be in~~ **Be in** MODE 4 within ~~1213~~ 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, 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;

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. One or more DC electrical power distribution subsystems inoperable.</p>	<p>C.1 Restore DC electrical power distribution subsystem(s) to OPERABLE status.</p>	<p>2 hours <u>[OR</u> In accordance with the Risk Informed Completion Time Program]</p>
<p>D. Required Action and associated Completion Time not met.</p>	<p>D.1 Be in MODE 3. <u>AND</u> D.2 -----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 4. ----- Be in MODE 4.</p>	<p>6 hours          12 hours</p>
<p>E. Two or more electrical power distribution subsystems inoperable that result in a loss of function.</p>	<p>E.1 <b>Be in MODE 3.</b><del>Enter LCO 3.0.3.</del> <u>AND</u> E.2 <b>Be in MODE 5.</b></p>	<p><b>6 hours Immediately</b>          <b>36 hours</b></p>



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**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.

BASES

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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.

**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 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 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. 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 ~~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 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

BASES

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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

## BASES

## ACTIONS (continued)

results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

E.1

Condition E corresponds to a level of degradation in the electrical distribution system that causes a required safety function to be lost. **The plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 6 hours and MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.** ~~When more than one inoperable electrical power distribution subsystem results in the loss of a required function, the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown.~~

SURVEILLANCE  
REQUIREMENTSSR 3.8.9.1

This Surveillance verifies that the [required] AC, DC, and AC vital bus electrical power distribution systems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical divisions is maintained, and the appropriate voltage is available to each required bus. The verification of proper voltage availability on the buses ensures that the required voltage is readily available for motive as well as control functions for critical system loads connected to these buses. [ The 7 day Frequency takes into account the redundant capability of the AC, DC, and AC vital bus electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

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 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.

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, **corrective measures shall be completed that permit operation in accordance with the LCO or ACTIONS within: 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. 1 hour; or
- b. 24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.

**If at the end of the specified period operation is not in accordance with the LCO or ACTIONS:**

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

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;

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more DC electrical power distribution subsystems inoperable.	C.1 Restore DC electrical power distribution subsystem(s) to OPERABLE status.	2 hours  <u>[OR</u>  In accordance with the Risk Informed Completion Time Program]
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3.  <u>AND</u>  D.2 -----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 4. -----  Be in MODE 4.	6 hours          12 hours
E. Two or more electrical power distribution subsystems inoperable that result in a loss of safety function.	E.1 <b>Be in MODE 3.</b> <del>Enter LCO 3.0.3.</del>  <u>AND</u>  E.2 <b>Be in MODE 5.</b>	<b>6 hours Immediately</b>          <b>36 hours</b>



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**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:

- 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.

BASES

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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.

**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 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 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. 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 ~~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 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

## BASES

## 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

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## ACTIONS (continued)

Required Action D.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

E.1

Condition E corresponds to a level of degradation in the electrical power distribution system that causes a required safety function to be lost. **The plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 6 hours and MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.** ~~When more than one inoperable electrical power distribution subsystem results in the loss of a required function, the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown.~~

SURVEILLANCE  
REQUIREMENTSSR 3.8.9.1

This Surveillance verifies that the [required] AC, DC, and AC vital bus electrical power distribution systems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical divisions is maintained, and the appropriate voltage is available to each required bus. The verification of proper voltage availability on the buses ensures that the required voltage is readily available for motive as well as control functions for critical system loads connected to these buses. [ The 7 day Frequency takes into account the redundant capability of the AC, DC, and AC vital bus electrical power distribution subsystems, and other

### 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, **corrective measures shall be completed that permit operation in accordance with the LCO or ACTIONS within: 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. **1 hour; or**
- b. **24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**If at the end of the specified period operation is not in accordance with the LCO or ACTIONS:**

- 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, 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;

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more DC electrical power distribution subsystems inoperable.	C.1 Restore DC electrical power distribution subsystem(s) to OPERABLE status.	2 hours  <u>[OR</u>  In accordance with the Risk Informed Completion Time Program]
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3.  <u>AND</u>  D.2 Be in MODE 5.	6 hours    36 hours
E. Two or more electrical power distribution subsystems inoperable that result in a loss of safety function.	E.1 <b>Be in MODE 3. Enter <del>LCO 3.0.3.</del></b>  <u>AND</u>  <b>E.2 Be in MODE 5.</b>	<b>6 hours Immediately</b>    <b>36 hours</b>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.9.1 Verify correct breaker alignments and voltage to [required] AC, DC, and AC vital bus electrical power distribution subsystems.	[ 7 days  <u>OR</u>  In accordance with the Surveillance Frequency Control Program ]



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**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.

BASES

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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.

**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 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 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. 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 ~~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 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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**BASES**

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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~~<sup>11</sup> hours, because the total time for entering MODE 4 is not reduced from the allowable limit of ~~12~~<sup>13</sup> 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.

BASES

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ACTIONS (continued)

E.1

Condition E corresponds to a level of degradation in the electrical distribution system that causes a required safety function to be lost. **The plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 6 hours and MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.** ~~When more than one inoperable electrical power distribution subsystem results in the loss of a required function, the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown.~~

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SURVEILLANCE  
REQUIREMENTS

SR 3.8.9.1

This Surveillance verifies that the AC, DC, and AC vital bus electrical power distribution systems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical divisions is maintained, and the appropriate voltage is available to each required bus. The verification of proper voltage availability on the buses ensures that the required voltage is readily available for motive as well as control functions for critical system loads connected to these buses. [ The 7 day Frequency takes into account the redundant capability of the AC, DC, and AC vital bus electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

-----REVIEWER'S NOTE-----  
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.  
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REFERENCES

1. FSAR, Chapter [6].
2. FSAR, Chapter [15].

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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, **corrective measures shall be completed that permit operation in accordance with the LCO or ACTIONS within: 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. 1 hour; or**
- b. 24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**If at the end of the specified period operation is not in accordance with the LCO or ACTIONS:**

- ~~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, 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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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more [station service] DC electrical power distribution subsystems inoperable.	C.1 Restore DC electrical power distribution subsystem(s) to OPERABLE status.	2 hours  <u>[OR</u>  In accordance with the Risk Informed Completion Time Program]
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 -----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. -----  Be in MODE 3.	12 hours
E. [ One or more DG DC electrical power distribution subsystems inoperable.	E.1 Declare associated DG(s) inoperable.	Immediately ]
F. Two or more electrical power distribution subsystems inoperable that result in a loss of function.	F.1 <b>Be in MODE 3. Enter <del>LCO 3.0.3.</del></b>  <b><u>AND</u></b>  F.2 <b>Be in MODE 4.</b>	<b>12 hours</b> <b><del>Immediately</del></b>  <b>36 hours.</b>



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**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 3.4.10, "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.

BASES

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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.

**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 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 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. 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

## BASES

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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 ~~1044~~ hours, because the total time for entering MODE 3 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 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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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
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BASES

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## ACTIONS (continued)

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 4) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Required Action D.1 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 3. This Note prohibits the use of LCO 3.0.4.a to enter MODE 3 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 3, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion Time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

E.1

With one or more DG DC buses inoperable, the associated DG(s) may be incapable of performing their intended functions. In this situation the DG(s) must be immediately declared inoperable. This action also requires entry into applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources - Operating."

F.1

Condition F corresponds to a level of degradation in the electrical distribution system that causes a required safety function to be lost. **The plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 12 hours and MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. ~~When more than one AC or DC electrical power distribution subsystem is lost, and this results in the loss of a required function, the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued~~**

~~operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown.~~

### 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, **corrective measures shall be completed that permit operation in accordance with the LCO or ACTIONS within: 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. **1 hour; or**
- b. **24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**If at the end of the specified period operation is not in accordance with the LCO or ACTIONS:**

- a. ~~Be in~~ **Be in** MODE 2 within ~~67~~ hours,
- b. ~~Be in~~ **Be in** MODE 3 within ~~1213~~ hours, and
- c. ~~Be in~~ **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, 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;

## ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more [Division 1 and 2] DC electrical power distribution subsystems inoperable.	C.1 Restore [Division 1 and 2] DC electrical power distribution subsystem(s) to OPERABLE status.	2 hours  <u>OR</u>  In accordance with the Risk Informed Completion Time Program]
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 -----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. -----  Be in MODE 3.	12 hours
E. One or more [Division 3] AC, DC, or AC vital bus electrical power distribution subsystems inoperable.	E.1 Declare High Pressure Core Spray System [and 2C Standby Service Water System] inoperable.	Immediately
F. Two or more electrical power distribution subsystems inoperable that result in a loss of function.	F.1 <b>Be in MODE 3. Enter <del>LCO 3.0.3.</del></b>  <b><u>AND</u></b>  F.2 <b>Be in MODE 4.</b>	<b>12 hours</b> <b><del>Immediately</del></b>  <b>36 hours</b>



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**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 3.4.11, "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.

**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 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 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. 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 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~~<sup>11</sup> hours, because the total time for entering MODE 3 is not reduced from the allowable limit of ~~12~~<sup>13</sup> 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

## BASES

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### ACTIONS (continued)

If the inoperable electrical power distribution system cannot be restored to OPERABLE status within the associated Completion Times, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours.

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 4) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Required Action D.1 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 3. This Note prohibits the use of LCO 3.0.4.a to enter MODE 3 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 3, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion Time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

#### E.1

With the Division 3 electrical power distribution system inoperable, the Division 3 powered systems are not capable of performing their intended functions. Immediately declaring the high pressure core spray inoperable allows the ACTIONS of LCO 3.5.1, "ECCS - Operating," to apply appropriate limitations on continued reactor operation.

#### F.1

Condition F corresponds to a level of degradation in the electrical distribution system that causes a required safety function to be lost. **The plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 12 hours and MODE 4 within 36 hours. The allowed Completion**

**Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.** (~~Single division systems are not included, although for this Action, Division 3 is considered redundant to Division 1 and 2 ECCS.)~~ ~~When two or more inoperable electrical power distribution subsystems result in the loss of a required function, the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown.~~

### 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, **corrective measures shall be completed that permit operation in accordance with the LCO or ACTIONS within: 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. **1 hour; or**
- b. **24 hours if entry into LCO 3.0.3 is unplanned and risk is assessed and managed.**

**If at the end of the specified period operation is not in accordance with the LCO or ACTIONS:**

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

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## ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two inoperable divisions that result in a loss of safety function.	F.1 <b>Be in MODE 3.</b> <del>Enter LCO 3.0.3.</del>	<b>6 hours</b> <del>Immediately</del>
	<b><u>AND</u></b> F.2 <b>Be in MODE 5.</b>	<b>36 hours</b>

## SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.5.1      Verify correct breaker and switch alignments and voltage to required DC and AC instrument and control electrical power distribution subsystems.	7 days

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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.

**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 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 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. 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 stresses on components of the Reactor Coolant System and the potential**

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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.

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**ACTIONS (continued)**

- c. The potential for an event in conjunction with a single failure of a redundant component.

The 2 hour Completion Time for restoring one DC electric power distribution system division to OPERABLE status is consistent with Regulatory Guide 1.93 (Ref. 4).

E.1 and E.2

If the inoperable distribution division(s) cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to MODE 5 where the probability and consequences on an event are minimized. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

F.1

With two inoperable divisions that result in a loss of safety function, adequate core cooling, containment OPERABILITY and other vital functions for DBA mitigation would be compromised. **The plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 6 hours and MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.** ~~and immediate plant shutdown in accordance with LCO 3.0.3 is required.~~

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**SURVEILLANCE  
REQUIREMENTS**SR 3.8.5.1

This Surveillance verifies that the Class 1E AC instrument and control and DC electrical power distribution subsystems are functioning properly, with the required circuit breakers and switches properly aligned. The verification of proper voltage availability on the buses ensures that the required voltage is readily available for motive as well as control functions for critical system loads connected to these buses. The 7 day Frequency takes into account the redundant capability of the Class 1E AC instrument and control and DC electrical power distribution subsystems, and other indications available in the control room that alert the operator to electrical power distribution system malfunctions.