

**Advanced Passive 1000 (AP1000)
Generic Technical Specification Traveler (GTST)**

Title: Changes Related to LCO 3.0, Limiting Conditions for Operation (LCO) Applicability

I. Technical Specifications Task Force (TSTF) Travelers, Approved Since Revision 2 of STS NUREG-1431, and Used to Develop this GTST

TSTF Number and Title:

TSTF-006-A, Rev 1, Add Exception for LCO 3.0.7 to LCO 3.0.1
 TSTF-071-A, Rev 2, Add Example of SFDP to the 3.0.6 Bases
 TSTF-122-A, Rev 0, Revise LCO 3.0.2 Bases to Remove Possible Confusion
 TSTF-166-A, Rev 0, Correct Inconsistency between LCO 3.0.6 and the SFDP Regarding Performance of an Evaluation
 TSTF-273-A, Rev 2, SFDP Clarifications
 TSTF-359-A, Rev 9, Increase Flexibility in MODE Restraints
 TSTF-372-A, Rev 4, Addition of LCO 3.0.9, Inoperability of Snubbers
 TSTF-427-A, Rev 2, Allowance for Non-Technical Specification Barrier Degradation on Supported System OPERABILITY
 TSTF-482-A, Rev 0, Correct LCO 3.0.6 Bases
 TSTF-494-T, Rev 1, Correct Bases Discussion of Figure B3.0-1

STS NUREGs Affected:

TSTF-006-A, Rev 1: NUREGs 1430 and 1431
 TSTF-071-A, Rev 2: NUREGs 1430, 1431, 1432, 1433, and 1434
 TSTF-122-A, Rev 0: NUREGs 1430, 1431, 1432, 1433, and 1434
 TSTF-166-A, Rev 0: NUREGs 1430, 1431, 1432, 1433, and 1434
 TSTF-273-A, Rev 2: NUREGs 1430, 1431, 1432, 1433, and 1434
 TSTF-359-A, Rev 9: NUREGs 1430, 1431, 1432, 1433, and 1434
 TSTF-372-A, Rev 4: NUREGs 1430, 1431, 1432, 1433, and 1434
 TSTF-427-A, Rev 2: NUREGs 1430, 1431, 1432, 1433, and 1434
 TSTF-482-A, Rev 0: NUREGs 1430, 1431, 1432, 1433, and 1434
 TSTF-494-T, Rev 1: NUREGs 1430, 1431, 1432, 1433, and 1434

NRC Approval Date:

TSTF-006-A, Rev 1: 01-Feb-96
 TSTF-071-A, Rev 2: 27-Oct-98
 TSTF-122-A, Rev 0: 13-Mar-97
 TSTF-166-A, Rev 0: 02-May-97
 TSTF-273-A, Rev 2: 16-Aug-99
 TSTF-359-A, Rev 9: 12-May-03
 TSTF-372-A, Rev 4: 27-Apr-05
 TSTF-427-A, Rev 2: 03-Oct-06
 TSTF-482-A, Rev 0: 06-Dec-05
 TSTF-494-T, Rev 1: 18-May-06

TSTF Classification:

TSTF-006-A, Rev 1: Consistency/Standardization
TSTF-071-A, Rev 2: Improve Specifications
TSTF-122-A, Rev 0: Change Bases
TSTF-166-A, Rev 0: Correct Specifications
TSTF-273-A, Rev 2: Correct Specifications
TSTF-359-A, Rev 9: Technical Change
TSTF-372-A, Rev 4: Technical Change
TSTF-427-A, Rev 2: Technical Change
TSTF-482-A, Rev 0: Bases Only Change
TSTF-494-T, Rev 1: Bases Only Change

II. Reference Combined License (RCOL) Standard Departures (Std. Dep.), RCOL COL Items, and RCOL Plant-Specific Technical Specifications (PTS) Changes Used to Develop this GTST

RCOL Std. Dep. Number and Title:

There are no Vogtle Electric Generating Plant Units 3 and 4 (Vogtle or VEGP) departures applicable to GTS LCO 3.0.

RCOL COL Item Number and Title:

There are no Vogtle COL items applicable to GTS LCO 3.0.

RCOL PTS Change Number and Title:

The VEGP License Amendment Request (LAR) proposed the following changes to the initial version of the PTS (referred to as the current TS by the VEGP LAR). These changes include Administrative Changes (A), Detail Removed Changes (D), Less Restrictive Changes (L), and More Restrictive Changes (M). These changes are discussed in Sections VI and VII of this GTST.

VEGP LAR DOC A005: Editorial Corrections
VEGP LAR DOC L05: Deletion of LCO 3.0.8

III. Comments on Relations Among TSTFs, RCOL Std. Dep., RCOL COL Items, and RCOL PTS Changes

This section discusses changes: (1) that were applicable to previous designs, but are not to the current design; (2) that are already incorporated in the GTS; and (3) that are superseded by another change.

VEGP LAR DOC L05 deletes GTS LCO 3.0.8. TSTF-372-A, Rev. 4, and TSTF-427-A, Rev. 2, each add a new LCO 3.0 subsection, which are subsequently numbered as LCO 3.0.8 and LCO 3.0.9.

TSTF-006-A, Rev. 1, was incorporated into Revision 2 of the STS NUREG series. Revision 2 of NUREG-1431 is the reported basis for the AP1000 GTS. However, TSTF-006 was not included in the AP1000 GTS and it appears that TSTF-006 should be included because it provides an appropriate exception for LCO 3.0.7. This is also consistent with VEGP LAR DOC A005.

TSTF-071-A, Rev. 2, TSTF-166-A, Rev. 0, and TSTF-273-A, Rev. 2 were incorporated in Revision 2 of the WOG ISTS. Therefore, it was expected that these three TSTFs would have been incorporated into the AP1000 GTS. However, TSTF-071-A and TSTF-166-A have not been included in the AP1000 GTS, whereas, TSTF-273-A was included. TSTF-071-A added several examples and a figure (Figure B 3.0-1) to the WOG LCO 3.0.6 Bases. TSTF-166-A notes the inconsistency between LCO 3.0.6, the SFDP, and the LCO 3.0.6 Bases. This is corrected by explicitly requiring an evaluation in accordance with the SFDP in LCO 3.0.6; rather than the current statement that "additional evaluations may be required." Incorporating these two TSTFs into the AP1000 STS would make the AP1000 STS consistent with all of the current STS (NUREGs 1430 through 1434). TSTF-273-A is not discussed further in this GTST.

TSTF-122-A, Rev. 0, was incorporated into Revision 2 of the STS NUREG series. Revision 2 of NUREG-1431 is the reported basis for the AP1000 GTS. However, TSTF-122 was not included in the AP1000GTS and it appears that TSTF-122 should be included because it provides clarification for the LCO 3.0.2 Bases discussion.

TSTF-372-A, Rev. 4, and TSTF-427-A, Rev. 2, each add a new LCO 3.0 subsection. As a result, LCO 3.0.1 is updated to reflect the applicability of LCO 3.0.8 and LCO 3.0.9.

TSTF-494-T, Rev. 1 provides an introductory paragraph to the Bases examples added by TSTF-071-A. Two of the three TSTF-071-A examples are also modified by TSTF-494-T.

IV. **Additional Changes Proposed as Part of this GTST (modifications proposed by NRC staff and/or clear editorial changes or deviations identified by preparer of GTST)**

None

V. Applicability

Affected Generic Technical Specifications and Bases:

Section 3.0 LIMITING CONDITIONS FOR OPERATION (LCO) APPLICABILITY

Changes to the Generic Technical Specifications and Bases:

AP1000 LCO 3.0.8 is deleted. LCO 3.0.8.a imposes a “restore” action, but does not include a stated completion time. This action duplicates the “restore” action already imposed in various Mode 5 or 6 Specifications, and for these Specifications does not provide any additional safety benefit. (DOC L05)

LCO 3.0.1 is updated to reflect an exception for LCO 3.0.7 and the addition of STS LCOs 3.0.8 and 3.0.9. This change completes Revision 0 change NRC-03, C.5 which added STS LCO 3.0.7 to address test exception LCOs and was omitted by the original change. (DOC A005, TSTF-006-A, TSTF-372-A, and TSTF 427-A)

LCO 3.0.2 Bases are revised to clarify the discussion regarding intentional entry into Actions. This is a basic editorial change to clarify the concept. (TSTF-122-A)

LCO 3.0.4 Specification and Bases are revised to implement a three tier approach to MODE changes when an LCO is not met. Points a, b, and c are added to LCO 3.0.4 and associated Bases discussion regarding when entry into a higher MODE is permissible. The clarified statement of LCO 3.0.4 eliminates the need for many LCO 3.0.4 exceptions in many LCOs. Therefore, references to LCO 3.0.4 in other LCO Action Notes are eliminated or revised. (TSTF-359-A)

Examples of a loss of safety function when a support system is inoperable and a Figure are added to the LCO 3.0.6 Bases. The application of LCO 3.0.6 is a cause of confusion. Examples and a figure help clarify the appropriate application of LCO 3.0.6. (TSTF-71-A)

LCO 3.0.6 Specification is revised to specifically require an evaluation in accordance with the SFDP; rather than the current statement that “additional evaluations may be required.” There is an inconsistency between LCO 3.0.6, the SFDP, and the LCO 3.0.6 Bases. (TSTF-166-A)

The Bases of LCO 3.0.6 are corrected to be consistent with the statements in LCO 3.0.6. This is a basic editorial change to clarify the concept. (TSTF-482-A)

Examples that discuss Figure B 3.0-1 in the bases of LCO 3.0.6 are revised to more accurately describe a loss of safety function and to be internally consistent. Example inconsistencies are confusing and should be corrected in order for the bases to be a useful tool in understanding the TS. (TSTF-494-T)

STS LCO 3.0.8 is added. Snubber system requirements were relocated from TS to other licensee controlled documents. This resulted in confusion regarding the appropriate action for an inoperable snubber. This change provides clarity. (TSTF-372-A)

STS LCO 3.0.9 is added. This provides for a limited time in which TS related systems rendered inoperable by barriers which cannot perform their related support function may be considered OPERABLE. (TSTF-427-A)

VI. Traveler Information

Description of TSTF changes:

LCO 3.0.7 is added to address test exception LCOs in the list of LCO 3.0.1 exceptions per TSTF-006-A, Rev. 1.

Two sentences in the AP1000 GTS LCO 3.0.2 Bases are revised by TSTF-122-A, Rev. 0 from:

Alternatives that would not result in redundant equipment being inoperable should be used instead. Doing so limits the time both subsystems/trains of a safety function are inoperable and limits the time other conditions could exist which result in LCO 3.0.3 being entered.

to:

Additionally, if intentional entry into ACTIONS would result in redundant equipment being inoperable, alternatives should be used instead. Doing so limits the time both subsystems/trains of a safety function are inoperable and limits the time conditions could exist which may result in LCO 3.0.3 being entered.

AP1000 GTS LCO 3.0.4 is revised by TSTF-359-A, Rev. 9 to allow entry into a MODE or other specified condition in the Applicability while relying on the associated ACTIONS, provided that there is a risk assessment performed which justifies the use of LCO 3.0.4, the ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time, or an NRC approved allowance is provided in the Specification to be entered. The current AP1000 GTS LCO 3.0.4 allows entry into a MODE or a specified condition in the Applicability, while relying on the associated ACTIONS, only if the ACTIONS permit continued operation in the MODE or other specified condition in the Applicability for a unlimited period of time, or if an NRC approved allowance is provided in the Specification to be entered. SR 3.0.4 is revised to reflect the concepts of the change to LCO 3.0.4. The applicability of LCO 3.0.4 and SR 3.0.4 is expanded to include transition into all MODES or other specified conditions in the Applicability, except when required to comply with ACTIONS or that are part of a shutdown of the unit. As a result, many LCO exceptions to LCO 3.0.4 are eliminated or revised.

The LCO 3.0.6 Bases are revised from "LCO 3.0.6 establishes an exception to LCO 3.0.2 for support systems that have an LCO specified in the Technical Specifications (TS)" to "LCO 3.0.6 establishes an exception to LCO 3.0.2 for supported systems that have a support system LCO specified in the Technical Specifications (TS)."

Example B 3.0.6-1, Example B 3.0.6-2, and Example B 3.0.6-3 are added by TSTF-071-A, Rev. 2 (and subsequently revised by TSTF-494-T), along with Figure B 3.0-1, to provide better clarity for the application of LCO 3.0.6. An introductory paragraph is added to the examples to provide guidance to the reader in the use of the examples.

LCO 3.0.6 Specification is revised by TSTF-166-A, Rev. 0 to require an evaluation in accordance with the Safety Function Determination Program (SFDP).

Also, two editorial corrections are made to the LCO 3.0.6 Bases by TSTF-482-A, Rev. 0 to make the sentences grammatically correct.

A new STS LCO 3.0.8 and associated Bases discussion is added by TSTF-372-A, Rev. 4 to allow a delay time for snubbers which cannot perform their required support function, before the supported systems are declared inoperable.

A new STS LCO 3.0.9, and associated Bases discussion is added by TSTF-427-A, Rev. 2 to address barriers which cannot perform their related support function for TS systems. The new LCO 3.0.9 allows barriers to be unable to perform their related support function for up to 30 days before declaring the supported system inoperable.

Rationale for TSTF changes:

LCO 3.0.7 was inadvertently omitted by the STS Revision 0 change (NRC-03, C.5) that added LCO 3.0.7 regarding test exception LCOs. LCO 3.0.1 in the CEOG, BWR-4, and BWR-6 STS included a reference to LCO 3.0.7 as part of change NRC-03, C.5. Applying TSTF-006-A, Rev. 1 corrects this oversight.

The original wording of LCO 3.0.2 is confusing because it begins to discuss inoperability of redundant equipment without introducing the topic. This topic of inoperable redundant equipment seems to be more appropriate for the Bases of LCO 3.0.3, but an appropriate discussion is already provided there. The proposed wording in TSTF-122-A, Rev. 0 retains the intent while presenting the material in the appropriate context of LCO 3.0.2.

TSTF-359-A reflects the allowances of LCO 3.0.4, which are based on NRC Generic Letter 87-09. GL 87-09 indicates that with respect to unnecessary restrictions on MODE changes, "Specification LCO 3.0.4 unduly restricts facility operation when conformance with Action Requirements provides an acceptable level of safety for continued operation. For an LCO that has Action Requirements permitting continued operation for an unlimited period of time, entry into an operation MODE or other specified condition of operation should be permitted in accordance with the Action Requirements." For example, the startup of a unit could be delayed due to the current restrictions of LCO 3.0.4. A single maintenance activity that is almost complete could cause significant delays and changes in a previously well thought out plan for returning the unit to service. In such situations, allowing the unit to enter the MODE or other specified condition in the Applicability would allow the work to be completed while reducing the likelihood of human error caused by expediting the completion of required Surveillances and maintenance activities. Therefore, application of TSTF-359-A to the AP1000 GTS provides necessary standardization and consistency to the use and application of LCO 3.0.4.

Figure B 3.0-1 and the accompanying discussion, including Examples B 3.0.6-1, B 3.0.6-2, and B 3.0.6-3, were added by TSTF-71, Rev. 2 and approved by the NRC on 10/27/1998. The purpose of the figure and the examples is to clarify the discussions of a loss of safety function and cross train checks.

TSTF-166-A, Rev. 0 identifies an inconsistency between LCO 3.0.6, the SFDP, and the LCO 3.0.6 Bases. As currently written, LCO 3.0.6 Specification does not explicitly require an evaluation in accordance with the SFDP; rather it states that additional evaluations may be required. In addition, because LCO 3.0.6 now states that the evaluation shall be done in accordance with the SFDP and the SFDP states that other appropriate actions may be taken, there is no need for the statement "additional . . . limitations may be required" in LCO 3.0.6.

Former TS requirements for snubbers and many other support systems were relocated to a licensee controlled document such as the Technical Requirements Manual (TRM) or a program document. GTS LCOs 3.0.2 and 3.0.6 require a licensee to immediately enter the supported system Conditions and Required Actions when a snubber is removed for testing. In other words,

once the snubber LCO is removed from the GTS, there is no exception from the TS requirements for snubbers and if a snubber is removed for maintenance, testing, or repair, the supported system Conditions and Required Actions must be entered immediately. Therefore, TSTF-372-A provides a new LCO 3.0.8 to allow a delay time for snubbers which cannot perform their required support function, before the supported systems are declared inoperable. This is consistent with the snubber requirements prior to removing snubbers from the TS.

Many systems require barriers in order to perform their function. For example, there are barriers to protect systems from the effects of internal flooding, such as floor plugs and retaining walls, and barriers are used to prevent steam impingement in case of a high energy line break. Barriers are used to protect systems against missiles, either internally generated or generated by external events. Risk-Informed Technical Specifications Task Force (RITSTF) Initiative 7a addresses the effect of barriers which cannot perform their related support function on systems governed by TS. TSTF-427-A provides for a limited time in which TS related systems rendered inoperable by barriers which cannot perform their related support function may be considered OPERABLE.

If a barrier cannot perform its related support function due to some type of failure or due to intentional removal to facilitate plant operation, the supported system may be inoperable under the definition of OPERABILITY. However, the magnitude of plant risk associated with the barrier which cannot perform its related support function does not warrant declaring the supported system inoperable provided at least one train of the system is OPERABLE and the supporting barriers are capable of performing their related support functions.

Therefore, the proposed change provides a limited period of time to consider the supported system OPERABLE when the barrier is not capable of performing its related support function.

Description of changes in RCOL Std. Dep., RCOL COL Item(s), and RCOL PTS Changes:

VEGP LAR DOC A005 revises LCO 3.0.1 to include an exception for LCO 3.0.7.

VEGP LAR DOC L05 eliminates AP1000 GTS LCO 3.0.8.

A more detailed description of the changes by each of the above DOCs can be found in Reference 2, VEGP TSU LAR in Enclosure 1; the NRC staff safety evaluation can be found in Reference 3, VEGP LAR SER. The VEGP TSU LAR was modified in response to NRC staff RAIs (Reference 9) by Southern Nuclear Operating Company's RAI Response in Reference 10.

Rationale for changes in RCOL Std. Dep., RCOL COL Item(s), and RCOL PTS Changes:

The intent of LCO 3.0.7 is to provide an exception to LCO 3.0.1.

VEGP LAR DOC L05 notes that current considerations of LCO 3.0.8 are adequately addressed within individual LCO referencing LCO 3.0.8 or by TS 5.4.1.b to Monitor Safety System Shutdown Monitoring Trees parameters.

Description of additional changes proposed by NRC staff/preparer of GTST:

Not Applicable

Rationale for additional changes proposed by NRC staff/preparer of GTST:

Not Applicable

VII. GTST Safety Evaluation

Technical Analysis:

TSTF-359-A allows entry into a higher mode of operation, or other specified condition in the GTS applicability, while relying on the GTS conditions, and associated required actions and completion times, provided a risk assessment is performed to confirm the acceptability of that action. Technical specifications have taken advantage of risk technology as experience and capability have increased. The proposal revises GTS LCO 3.0.4 and SR 3.0.4, and their application to the STS. New paragraphs (a), (b), and (c) are proposed for LCO 3.0.4.

The proposed LCO 3.0.4(a) retains the current allowance, permitting the mode change when the TS required actions allow indefinite operation.

The addition of LCO 3.0.4(b), which allows entry into a MODE or other specified condition in the Applicability while relying on ACTIONS based on a risk assessment, is reasonable based on many factors. The licensee, and particularly the licensee management, is always responsible for maintaining overall plant configuration and safety. Developments in the Maintenance Rule and other Industry/NRC initiatives (including the configuration risk management programs) enhance the tools available to licensees to assess the risk associated with various plant configurations. This change is a logical step of requiring licensees to assess the application of LCO 3.0.4 allowances in light of the newly available tools and information.

The risk assessment may consider a variety of factors, but will focus on managing plant risk. Consideration would be given to the probability of completing restoration such that the requirements of the LCO would be met prior to the ACTIONS requiring that the Applicability be exited. The assessment may also establish appropriate compensatory measures to enhance safe and effective operations until restoration of compliance with the LCO. The proposed change would provide the flexibility of not restricting which MODES can be entered while relying on the ACTIONS, as do the current LCO 3.0.4 exceptions, but would add the requirement to assess the risks prior to making the MODE change when using LCO 3.0.4(b).

When an LCO is not met, the licensee must restore compliance with the LCO consistent with the requirements of the TS. This restoration may include corrective maintenance. 10 CFR 50.65 requires that licensees assess the effect equipment maintenance will have on the plant's capability to perform safety functions before beginning any maintenance activity on structures, systems, or components within the scope of the maintenance rule. Plant procedures must be in place to implement 10 CFR 50.65(a)(4) to address the situation where entering a mode or other specified condition in the applicability is contemplated with plant equipment inoperable. Such plant procedures typically follow the guidance in NUMARC 93-01, Section 11, as revised in February 2000 and endorsed by NRC RG 1.182.

The LCO 3.0.4(b) allowance does not apply to values and parameters of the TS that have their own respective LCOs (e.g., Reactor Coolant System Specific Activity), but instead those values and parameters are addressed by LCO 3.0.4(c). The LCO 3.0.4(c) allowances apply to parameters and values which have been previously approved by the NRC in a plant's specific TS. The licensee will provide in their TS Bases a discussion and list of each NRC-approved, LCO 3.0.4(c)-specific value and parameter allowance. The risk assessments performed to justify the use of LCO 3.0.4(b) usually only consider systems and components. For this reason, LCO 3.0.4(c) is typically applied to Specifications which describe values and parameters (e.g., [Containment Air Temperature, Containment Pressure, Moderator Temperature Coefficient]), and may be applied to other Specifications based on NRC plant-specific approval. The TS

values and parameters, for which mode transition allowances apply, will have a note that states LCO 3.0.4(c) is applicable.

Accident analyses presented in the UFSAR do not address the effects of the plant being in ACTIONS. The accident analyses assume that the necessary equipment is available and then, in most cases, assumes the single most limiting active failure occurs. It is this assumption that leads to limiting the length of Completion Times in order to minimize the length of time that the plant is not within the initial conditions of the accident analysis. This change does not affect the Completion Times. Therefore, this proposal would not affect the accident analyses and is therefore acceptable.

TSTF-482-A

LCO 3.0.6 states, "When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system."

However, the LCO 3.0.6 Bases states "LCO 3.0.6 establishes an exception to LCO 3.0.2 for support systems that have an LCO specified in the Technical Specifications (TS)." The Bases also do not specify that this is only true if the support system has an LCO in the TS. This is inconsistent with the Specification and incorrect.

LCO 3.0.2 states that when an LCO is not met, the Conditions and Required Actions must be entered. LCO 3.0.6 requires entering the Conditions and Required Actions for support systems when those support systems have an LCO in the TS. This change makes the Bases consistent with the TS.

TSTF-71-A and TSTF-494-T

Examples B 3.0.6-1, B 3.0.6-2, B 3.0.6-3, and Figure B 3.0-1 are added by TSTF-071-A, Rev. 2 to provide additional clarity to the application of LCO 3.0.6. The examples use Figure B 3.0-1 to illustrate loss of safety function conditions that may result when a support system is inoperable. These changes are a Bases-only change and provide clarity.

TSTF-166-A

LCO 3.0.6 Specification is revised to explicitly require an evaluation per the SFDP by deleting the statement, "additional evaluations and limitations may be required" and replacing it with the statement, "an evaluation shall be performed." This is necessary due to an inconsistency between LCO 3.0.6, the SFDP, and the LCO 3.0.6 Bases. As currently written, LCO 3.0.6 does not explicitly require an evaluation in accordance with the SFDP; rather, it states that additional evaluations may be required.

The required actions for specified support systems, though adequate when no other safety systems are inoperable, usually do not consider the possibility that other specified safety systems (both support and supported) in the redundant train are inoperable. If a system in one train is already inoperable when a support system in the opposite train becomes inoperable, a loss of function condition may exist. Accordingly, LCO 3.0.6 requires an evaluation for this condition in accordance with the SFDP whenever a support system LCO is not met.

TSTF-372-A, Rev. 4 introduces a risk-informed TS change which provides a delay time before entering the actions for the supported equipment when one or more snubbers are found inoperable or removed for testing is proposed. Such a delay time will provide needed flexibility in the performance of maintenance and testing during power operation and at the same time will enhance overall plant safety by (1) avoiding unnecessary unscheduled plant shutdowns, thus, minimizing plant transition and realignment risks; (2) avoiding reduced snubber testing, thus,

increasing the availability of snubbers to perform their supporting function; (3) performing most of the required testing and maintenance during the delay time when the supported system is available to mitigate most challenges, thus, avoiding increases in safety system unavailability; and (4) providing explicit risk-informed guidance in areas in which that guidance currently does not exist, such as the treatment of snubbers impacting more than one redundant train of a supported system.

The risk impact of the proposed TS changes was assessed following the three-tiered approach recommended in RG 1.177. A simplified bounding risk assessment was performed to justify the proposed TS changes. This bounding assessment assumes that the risk increase associated with the proposed addition of LCO 3.0.8 to the STS is associated with accident sequences initiated by a seismically-induced LOOP event with concurrent loss of all safety system trains supported by the out-of-service snubbers. In the case of snubbers associated with more than one train, it is assumed that all affected trains of the supported system are failed. This assumption was introduced to allow the performance of a simple bounding risk assessment approach with application to all plants and was selected due to the lack of detailed plant-specific seismic risk assessments for most plants and the lack of fragility data for piping when one or more supporting snubbers are inoperable. The impact from the addition of the proposed LCO 3.0.8 to the STS on defense-in-depth was also evaluated in conjunction with the risk assessment results.

The purpose of this change is to provide the same level of operational safety and flexibility provided by the snubbers as was provided prior to plant specific relocation of the snubber TS requirements. Prior to relocating the snubber requirements, if one or more snubbers were inoperable, the TS action statements for snubbers were taken. At the time that snubbers were included in the TS, the supported system was not considered inoperable while the snubber action statements were being taken. Only when the snubber action times were expired (or if directed by the snubber action statements) was the supported system considered inoperable and it's the supported system TS action statements followed. This interpretation of the snubber TS is based on the May 27, 1986 NRC memorandum (Ref. 5) which states, in part:

Normally snubbers would only be removed from a system for testing/surveillance purposes at a time when the system is not required to be operable. If, however, a snubber is removed from service, for any purpose, for a system which is required to be operable, the action statement for snubbers would apply. The action statement requires that inoperable snubber(s), those removed for testing, be restored to operable service in 72 hours.

The action statement also requires that an engineering evaluation of the attached component be performed in accordance with specification 4.7.9.g or that the attached system be declared inoperable. This specification (4.7.9.g) notes that where snubbers are found inoperable, an engineering evaluation is to determine if the components to which inoperable snubbers are attached were adversely affected to assure that the component remains capable of meeting its designated service. The intent of this requirement is to assure that the system was not adversely affected by the inoperable snubber. This does not relate to the system or components capability to withstand a seismic event. Any degradation in seismic protection due to inoperable snubbers was taken into account in establishing the 72 hour allowed outage time.

When a snubber is removed from service for testing, an engineering evaluation need not be performed. If the snubber is not returned to service in 72 hours, that system would be declared inoperable at this time since the snubber allowable out-of-service time limit would be exceeded.

Therefore, no decrease in plant safety occurs by the addition of LCO 3.0.8. This change is acceptable.

TSTF-427-A, Rev. 2 notes that the unavailability of barriers which protect TS required components from the effects of specific initiating events is typically a low risk configuration which should not require that the protected components be immediately declared inoperable. The current TS require that when such barriers are unavailable, the protected component LCO is immediately entered. Some potential undesirable consequences of the current TS requirements include:

1. When maintenance activities on the supported TS system requires removal and restoration of barriers, the time available to complete maintenance and perform system restoration and testing is reduced by the time spent maneuvering the barriers within the time constraints of the supported system LCO;
2. Restoration of barriers following maintenance must be given a high priority due to time restraints of the existing supported system LCO, when other more risk important activities may have a greater risk impact and should therefore be given priority; and
3. Unnecessary plant shutdowns may occur due to discovery of degraded barriers which may require more than the existing supported system LCO time to complete repairs and restoration.

To remove the overly restrictive requirements in the treatment of barriers, it is proposed that a risk-informed TS change which introduces a delay time before entering the actions for the supported equipment when one or more barriers are found degraded or removed to facilitate planned maintenance activities. Such a delay time will provide needed flexibility in the performance of maintenance during power operation and at the same time will enhance overall plant safety by (1) performing system maintenance and restoration activities, including post maintenance testing, within the existing TS LCO time, and allowing barrier removal and restoration to be performed outside of the TS LCO, providing more time for the safe conduct of maintenance and testing activities on the supported system; (2) requiring barrier removal and restoration activities to be assessed and prioritized based on actual plant risk impacts; and (3) avoiding unnecessary unscheduled plant shutdowns, thus minimizing plant transition and realignment risks.

The risk impact of the proposed TS changes was assessed following the three-tiered approach recommended in RG 1.177. A simplified bounding risk assessment was performed to justify the proposed TS changes. This bounding assessment was selected due to the lack of detailed plant-specific risk models for most plants which do not include failure modes of passive structures such as barriers. The impact from the addition of the proposed LCO 3.0.9 to the STS on defense-in-depth was also evaluated in conjunction with the risk assessment results. Based on this integrated evaluation, the NRC staff concludes that the proposed addition of LCO 3.0.9 to the STS would lead to insignificant risk increases as stipulated by RG 1.177. This conclusion is true without taking any credit for the removal of potential undesirable consequences associated with the current conservative treatment of barriers. Therefore, the proposed change to add LCO 3.0.9 provides adequate protection of public health and safety and is acceptable.

The remaining changes are editorial, clarifying, grammatical, or otherwise considered administrative. These changes do not affect the technical content, but improve the readability, implementation, and understanding of the requirements, and are therefore acceptable.

References to Previous NRC Safety Evaluation Reports (SERs):

VEGP LAR SER (GTST Reference 3)

TSTF-359-A: Federal Register /Vol. 68, No. 65 / Friday, April 4, 2003 /Notices (GTST Reference 5)

TSTF-372-A: Federal Register /Vol. 70, No. 85 / Wednesday, May 4, 2005 /Notices (GTST Reference 6)

TSTF-427-A: Federal Register /Vol. 71, No. 191 / Tuesday, October 3, 2006 /Notices (GTST Reference 7)

VIII. Review Information

Evaluator Comments:

None

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Review Information:

Availability for public review and comment on Revision 0 of this traveler approved by NRC staff on Friday, June 06, 2014.

NRC Final Approval Date:

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IX. Evaluator Comments for Consideration in Finalizing Technical Specifications and Bases

The database cannot currently handle deletion of entire tables in Section 3.0. Manually delete Table B 3.0-1. The database places all Bases figures at the end of the Bases section. Manually move Figure B 3.0-1 to the end of the Bases discussion for LCO 3.0.6.

The database does not yet recognize non-breaking hyphens or spaces. For Rev. 0 of this GTST, it was necessary to manually insert (1) non-breaking hyphens as necessary to interlock designations such as P-10 to avoid breaking across the end of a line; and (2) non-breaking spaces as necessary to (a) keep symbols such as “≥” with the subsequent value; and (b) avoid stranding a number value on a subsequent line, such as MODE 5.

X. References Used in GTST

1. AP1000 DCD, Revision 19, Section 16, "Technical Specifications," June 2011 (ML11171A500).
2. Southern Nuclear Operating Company, Vogtle Electric Generating Plant, Units 3 and 4, Technical Specifications Upgrade License Amendment Request, February 24, 2011 (ML12065A057).
3. NRC Safety Evaluation (SE) for Amendment No. 13 to Combined License (COL) No. NPF-91 for Vogtle Electric Generating Plant (VEGP) Unit 3, and Amendment No. 13 to COL No. NPF-92 for VEGP Unit 4, September 9, 2013, ADAMS Package Accession No. ML13238A337, which contains:
 - ML13238A355 Cover Letter - Issuance of License Amendment No. 13 for Vogtle Units 3 and 4 (LAR 12-002).
 - ML13238A359 Enclosure 1 - Amendment No. 13 to COL No. NPF-91
 - ML13239A256 Enclosure 2 - Amendment No. 13 to COL No. NPF-92
 - ML13239A284 Enclosure 3 - Revised plant-specific TS pages (Attachment to Amendment No. 13)
 - ML13239A287 Enclosure 4 - Safety Evaluation (SE), and Attachment 1 - Acronyms
 - ML13239A288 SE Attachment 2 - Table A - Administrative Changes
 - ML13239A319 SE Attachment 3 - Table M - More Restrictive Changes
 - ML13239A333 SE Attachment 4 - Table R - Relocated Specifications
 - ML13239A331 SE Attachment 5 - Table D - Detail Removed Changes
 - ML13239A316 SE Attachment 6 - Table L - Less Restrictive Changes

The following documents were subsequently issued to correct an administrative error in Enclosure 3:

 - ML13277A616 Letter - Correction To The Attachment (Replacement Pages) - Vogtle Electric Generating Plant Units 3 and 4-Issuance of Amendment Re: Technical Specifications Upgrade (LAR 12-002) (TAC No. RP9402)
 - ML13277A637 Enclosure 3 - Revised plant-specific TS pages (Attachment to Amendment No. 13) (corrected)
4. TSTF-GG-05-01, "Writer's Guide for Plant-Specific Improved Technical Specifications," June 2005.
5. TSTF-359-A: Federal Register /Vol. 68, No. 65 / Friday, April 4, 2003 /Notices
6. TSTF-372-A: Federal Register /Vol. 70, No. 85 / Wednesday, May 4, 2005 /Notices
7. TSTF-427-A: Federal Register /Vol. 71, No. 191 / Tuesday, October 3, 2006 /Notices
8. TSTF-GG-05-01, "Writer's Guide for Plant-Specific Improved Technical Specifications," June 2005.
9. RAI Letter No. 01 Related to License Amendment Request (LAR) 12-002 for the Vogtle Electric Generating Plant Units 3 and 4 Combined Licenses, September 7, 2012 (ML12251A355).

10. Southern Nuclear Operating Company, Vogtle Electric Generating Plant, Units 3 and 4, Response to Request for Additional Information Letter No. 01 Related to License Amendment Request LAR-12-002, ND-12-2015, October 04, 2012 (ML12286A363 and ML12286A360)
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XI. MARKUP of the Applicable GTS Section for Preparation of the STS NUREG

The entire section of the Specifications and the Bases associated with this GTST is presented next.

Changes to the Specifications and Bases are denoted as follows: Deleted portions are marked in strikethrough red font, and inserted portions in bold blue font.

3.0 LIMITING CONDITIONS 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 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, 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; and
- 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.

LCO Applicability

- 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:** ~~not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time.~~
- 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;**
 - b. **After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or**
 - c. **When an allowance is stated in the individual value, parameter, or other Specification.**

This Specification shall not prevent 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.

~~Exceptions to this Specification are stated in the individual Specifications.~~

~~LCO 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4.~~

-
- LCO 3.0.5 Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the test required to demonstrate OPERABILITY.

LCO Applicability

LCO 3.0.6 When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, ~~additional-an evaluation~~~~s-and limitations may be required~~ **shall be performed** in accordance with Specification 5.5.7, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

LCO 3.0.7 Test Exception LCO 3.1.8 allows specified Technical Specification (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with Test Exception LCOs is optional. When a Test Exception LCO is desired to be met but is not met, the ACTIONS of the Test Exception LCO shall be met. When a Test Exception LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall be made in accordance with the other applicable Specifications.

~~LCO 3.0.8 When an LCO is not met and the associated ACTIONS are not met or an associated ACTION is not provided, action shall be initiated within 1 hour to:~~

~~a. Restore inoperable equipment and~~

~~b. Monitor Safety System Shutdown Monitoring Trees parameters~~

~~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 3.0.8 is not required.~~

~~LCO 3.0.8 is only applicable in MODES 5 and 6.~~

LCO Applicability

- LCO 3.0.8 When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:
- a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or
 - b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.
- At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.
-

- LCO 3.0.9 When one or more required barriers are unable to perform their related support function(s), any supported system LCO(s) are not required to be declared not met solely for this reason for up to 30 days provided that at least one train or subsystem of the supported system is OPERABLE and supported by barriers capable of providing their related support function(s), and risk is assessed and managed. This specification may be concurrently applied to more than one train or subsystem of a multiple train or subsystem supported system provided at least one train or subsystem of the supported system is OPERABLE and the barriers supporting each of these trains or subsystems provide their related support function(s) for different categories of initiating events.
- If the required OPERABLE train or subsystem becomes inoperable while this specification is in use, it must be restored to OPERABLE status within 24 hours or the provisions of this specification cannot be applied to the trains or subsystems supported by the barriers that cannot perform their related support function(s).
- At the end of the specified period, the required barriers must be able to perform their related support function(s) or the supported system LCO(s) shall be declared not met.
-

B 3.0 LIMITING CONDITIONS FOR OPERATION (LCO) APPLICABILITY

BASES

LCOs	LCO 3.0.1 through LCO 3.0.98 establish the general requirements applicable to all Specifications and apply at all times, unless otherwise stated.
LCO 3.0.1	LCO 3.0.1 establishes the Applicability statement within each individual Specification as the requirements for when the LCO is required to be met (i.e. when the unit is in the MODES or other specified conditions of the Applicability statement of each Specification.)
LCO 3.0.2	LCO 3.0.2 establishes that upon discovery of a failure to meet an LCO, the associated ACTIONS shall be met. The Completion Time of each Required Action for an ACTIONS Condition is applicable from the point in time that the ACTIONS Condition is entered. The Required Actions establish those remedial measures that must be taken within specified Completion Times when the requirements of an LCO are not met. This specification establishes that: a. Completion of the Required Actions within the specified Completion Times constitutes compliance with a Specification; and b. Completion of the Required Actions is not required when an LCO is met within the specified Completion Time, unless otherwise specified. There are two basic types of Required Actions. The first type of Required Action specifies a time limit in which the LCO must be met. This time limit is the Completion Time to restore an inoperable system or component to OPERABLE status or to restore variables to within specified limits. If this type of Required Action is not completed within the specified Completion Time, a shutdown may be required to place the unit in a MODE or condition in which the Specification is not applicable. (Whether stated as a Required Action or not, correction of the entered Condition is an action that may always be considered upon entering ACTIONS.) The second type of Required Action specifies the remedial measures that permit continued operation of the unit that is not further restricted by the Completion Time. In this case compliance with the Required Actions provides an acceptable level of safety for continued operation.

BASES

LCO 3.0.2 (continued)

Completing the Required Actions is not required when an LCO is met, or is no longer applicable, unless otherwise stated in the individual Specifications.

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 reasons for intentionally relying on the ACTIONS include, but are not limited to, performance of Surveillances, preventive maintenance, corrective maintenance, or investigation of operational problems. Entering ACTIONS for these reasons must be done in a manner that does not compromise safety. Intentional entry into ACTIONS should not be made for operational convenience. **Additionally, if intentional entry into ACTIONS** ~~Alternatives that~~ would not result in redundant equipment being inoperable **alternatives** should be used instead. Doing so limits the time both subsystems/trains of a safety function are inoperable and limits the time ~~other~~ conditions could exist which **may** result in LCO 3.0.3 being entered. 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.

BASES

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 into LCO 3.0.3, 1 hour is allowed to prepare for an orderly shutdown before initiating a change in unit operation. This includes time to permit the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid. 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 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. A Condition exists for which the Required Actions have now been performed.

BASES

LCO 3.0.3 (continued)

- c. 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 Specification 3.0.3 allow 37 hours for the unit to be in MODE 5 when a shutdown is 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 the next lower MODE applies. If a lower MODE is reached in less time than allowed, however, the total allowable time to reach MODE 5, or other applicable MODE is not reduced. For example, if MODE 3 is reached in 2 hours, then the time allowed for reaching MODE 4 is the next 11 hours, because the total time for reaching MODE 4 is not reduced from the allowable limit of 13 hours. Therefore, if remedial measures are completed that would permit a return to MODE 1, a penalty is not incurred by having to reach 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 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. In MODES 5 and 6, LCO 3.0.8 provides actions for Conditions not covered in other Specifications.

Exceptions to 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.

BASES

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** ~~precludes~~ placing the unit in a MODE or other specified condition stated 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 LCO 3.0.4.a, LCO 3.0.4.b, or LCO 3.0.4.c. the following exist:**

~~a. Unit conditions are such that the requirements of the LCO would not be met in the Applicability desired to be entered; and~~

~~b. Continued noncompliance with the LCO requirements, if the Applicability were entered, would result in the unit being required to exit the Applicability desired to be entered to comply with the Required Actions.~~

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 permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. Compliance with Required 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 such cases, entry into a MODE or other specified condition in the Applicability may be made in accordance with the provisions of the Required Actions. The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability.

LCO 3.0.4.b allows entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate.

The risk assessment may use quantitative, qualitative, or blended approaches, and the risk assessment will be conducted using the plant program, procedures, and criteria in place to implement

BASES

LCO 3.0.4 (continued)

10 CFR 50.65(a)(4), which requires that risk impacts of maintenance activities to be assessed and managed. The risk assessment, for the purposes of LCO 3.0.4 (b), must take into account all inoperable Technical Specification 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 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants." Regulatory Guide 1.182 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 the proposed MODE change is acceptable. Consideration should also be given to the probability of completing restoration such that the requirements of the LCO would be met prior to the expiration of ACTIONS Completion Times that would require exiting the Applicability.

LCO 3.0.4.b may be used with single, or multiple systems and components unavailable. NUMARC 93-01 provides guidance relative to consideration of simultaneous unavailability of multiple systems and components.

The results of the risk assessment shall be considered in determining the acceptability of entering the MODE or other specified condition in the Applicability, and any corresponding risk management actions. The LCO 3.0.4.b risk assessments do not have to be documented.

The Technical Specifications allow continued operation with equipment unavailable in MODE 1 for the duration of the Completion Time. Since this is allowable, and since in general the risk impact in that particular MODE bounds the risk of transitioning into and

BASES

LCO 3.0.4 (continued)

through the applicable MODES or other specified conditions in the Applicability of the LCO, the use of the LCO 3.0.4.b allowance should be generally acceptable, as long as the risk is assessed and managed as stated above. However, there is a small subset of systems and components that have been determined to be more important to risk and use of the LCO 3.0.4.b allowance is prohibited. The LCOs governing these system and components contain Notes prohibiting the use of LCO 3.0.4.b by stating that LCO 3.0.4.b is not applicable.

LCO 3.0.4.c allows entry into a MODE or other specified condition in the Applicability with the LCO not met based on a Note in the Specification which states LCO 3.0.4.c is applicable. These specific allowances permit entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered do not provide for continued operation for an unlimited period of time and a risk assessment has not been performed. This allowance may apply to all the ACTIONS or to a specific Required Action of a Specification. The risk assessments performed to justify the use of LCO 3.0.4.b usually only consider systems and components. For this reason, LCO 3.0.4.c is typically applied to Specifications which describe values and parameters (e.g., [Containment Air Temperature, Containment Pressure, MCPR, Moderator Temperature Coefficient]), and may be applied to other Specifications based on NRC plant-specific approval.

The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability.

The provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that results from any unit shutdown. **In this context, a unit shutdown is defined as a change in MODE or other specified condition in the Applicability associated with transitioning from MODE 1 to MODE 2, MODE 2 to MODE 3, MODE 3 to MODE 4, and MODE 4 to MODE 5.**

BASES

LCO 3.0.4 (continued)

~~Exceptions to LCO 3.0.4 are stated in the individual Specifications. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered do not provide for continued operation for an unlimited period of time. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.~~

Upon entry into a MODE or other specified condition in the Applicability with the LCO not met, LCO 3.0.1 and LCO 3.0.2 require entry into the applicable Conditions and Required Actions until the Condition is resolved, until the LCO is met, or until the unit is not within the Applicability of the Technical Specification. ~~LCO 3.0.4 is only applicable when entering MODE 4 from MODE 5, MODE 3 from MODE 4 or 5, MODE 2 from MODE 3 or 4 or 5, or MODE 1 from MODE 2. Furthermore, LCO 3.0.4 is applicable when entering any other specified condition in the Applicability only while operating in MODE 1, 2, 3, or 4. The requirements of LCO 3.0.4 do not apply in MODES 5 and 6, or 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.~~

Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 3.0.1. Therefore, ~~changing MODES or other specified conditions while in an ACTIONS Condition, in compliance with~~ **utilizing** LCO 3.0.4 ~~or where an exception to LCO 3.0.4 is stated,~~ is not a violation of SR 3.0.1 or SR 3.0.4 for **any** ~~these~~ Surveillances that ~~do not have~~ **not been to be** performed ~~on due to the associated~~ inoperable equipment. However, SRs must be met to ensure OPERABILITY prior to declaring the associated equipment OPERABLE (or variable within limits) and restoring compliance with the affected LCO.

BASES

LCO 3.0.5 LCO 3.0.5 establishes the allowance of restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Specification is to provide an exception to LCO 3.0.2 (e.g., to not comply with the applicable Required Action(s)) to allow the performance of Surveillance Requirements to demonstrate:

- a. The OPERABILITY of the equipment being returned to service; or
- b. The OPERABILITY of other equipment.

The administrative controls ensure the time the equipment is returned to service in conflict with the requirements of the ACTIONS is limited to the time absolutely necessary to perform the required testing to demonstrate OPERABILITY. This specification does not provide time to perform any other preventive or corrective maintenance.

An example of demonstrating the OPERABILITY of the equipment being returned to service is reopening a containment isolation valve that has been closed to comply with Required Actions and must be reopened to perform the SRs.

An example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to prevent the trip function from occurring during the performance of an SR on another channel in the other trip system. A similar example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to permit the logic to function and indicate the appropriate response during the performance of an SR on another channel in the same trip system.

LCO 3.0.6 LCO 3.0.6 establishes an exception to LCO 3.0.2 for supported systems that have a support system ~~an~~ LCO specified in the Technical Specifications (TS). This exception is provided because LCO 3.0.2 would require that the Conditions and Required Actions of the associated inoperable supported system LCO be entered solely due to the inoperability of the support system. This exception is justified because the actions that are required to ensure the unit is maintained in a safe condition are specified in the support system LCO's Required Actions. These Required Actions may include entering the supported system's Conditions and Required Actions or may specify other Required Actions.

BASES

LCO 3.0.6 (continued)

When a support system is inoperable and there is an LCO specified for it in the TS, the supported system(s) are required to be declared inoperable if determined to be inoperable as a result of the support system inoperability. However it is not necessary to enter into the supported systems' Conditions and Required Actions unless directed to do so by the support system's Required Actions. The potential confusion and inconsistency of requirements related to the entry into multiple support and supported systems' LCOs' Conditions and Required Actions are eliminated by providing all the actions that are necessary to ensure the unit is maintained in a safe condition in the support system's Required Actions.

However, there are instances where a support system's Required Action may either direct a supported system to be declared inoperable or direct entry into Conditions and Required Actions for the supported system. This may occur immediately or after some specified delay to perform some other Required Action. Regardless of whether it is immediate or after some delay, when a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

Specification 5.5.7, "Safety Function Determination Program (SFDP)," ensures loss of safety function is detected and appropriate actions are taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other limitations, remedial actions, or compensatory actions may be identified as a result of the support system inoperability and corresponding exception to entering supported system Conditions and Required Actions. The SFDP implements the requirements of LCO 3.0.6.

The following examples use Figure B 3.0-1 to illustrate loss of safety function conditions that may result when a support system is inoperable. In this figure, the fifteen systems that comprise Train A are independent and redundant to the fifteen systems that comprise Train B. To correctly use the figure to illustrate the SFDP provisions for a cross train check, the figure establishes a relationship between support and supported systems as follows: the figure shows System 1 as a support system for System 2 and System 3; System 2 as a support system for System 4 and System 5; and System 4 as a support system for System 8 and System 9. Specifically, a loss of safety function may exist when a support system is inoperable and:

BASES

LCO 3.0.6 (continued)

- a. A system redundant to system(s) supported by the inoperable support system is also inoperable (EXAMPLE B 3.0.6-1),
- b. A system redundant to system(s) in turn supported by the inoperable supported system is also inoperable (EXAMPLE B 3.0.6-2), or
- c. A system redundant to support system(s) for the supported systems (a) and (b) above is also inoperable (EXAMPLE B 3.0.6-3).

For the following examples, refer to Figure B 3.0-1.

EXAMPLE B 3.0.6-1

If System 2 of Train A is inoperable and System 5 of Train B is inoperable, a loss of safety function exists in Systems 5, 10, and 11.

EXAMPLE B 3.0.6-2

If System 2 of Train A is inoperable, and System 11 of Train B is inoperable, a loss of safety function exists in System 11.

EXAMPLE B 3.0.6-3

If System 2 of Train A is inoperable, and System 1 of Train B is inoperable, a loss of safety function exists in Systems 2, 4, 5, 8, 9, 10 and 11.

If an evaluation determines that a loss of safety function exists, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

~~Cross train checks to identify a loss of safety function for those support systems that support multiple and redundant safety systems are required. The cross train check verifies that the supported systems of the redundant OPERABLE support system are OPERABLE, thereby ensuring safety function is retained. If this evaluation determines that a loss of safety function exists, the appropriate Conditions and Required Actions of the LCO in which the loss of safety functions exists are required to be entered.~~

BASES

LCO 3.0.6 (continued)

This loss of safety function does not require the assumption of additional single failures or loss of offsite power. Since operations are being restricted in accordance with the ACTIONS of the support system, any resulting temporary loss of redundancy or single failure protection is taken into account.

When loss of safety function is determined to exist, and the SFDP requires entry into the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists, consideration must be given to the specific type of function affected. Where a loss of function is solely due to a single Technical Specification support system (e.g., loss of automatic start due to inoperable instrumentation, or loss of pump suction source due to low tank level) the appropriate LCO is the LCO for the support system. The ACTIONS for a support system LCO adequately address the inoperabilities of that system without reliance on entering its supported system LCO. When the loss of function is the result of multiple support systems, the appropriate LCO is the LCO for the support system.

LCO 3.0.7

There are certain special tests and operations required to be performed at various times over the life of the unit. These special tests and operations are necessary to demonstrate select unit performance characteristics, to perform special maintenance activities, and to perform special evolutions. Test Exception LCO 3.1.8 allows specified Technical Specification (TS) requirements to be changed to permit performance of these special tests and operations, which otherwise could not be performed if required to comply with the requirements of these TS. Unless otherwise specified, all the other TS requirements remain unchanged. This will ensure all appropriate requirements of the MODE or other specified condition not directly associated with or required to be changed to perform the special test or operation will remain in effect.

The Applicability of a Test Exception LCO represents a condition not necessarily in compliance with the normal requirements of the TS. Compliance with Test Exception LCOs is optional. A special operation may be performed either under the provisions of the appropriate Test Exception LCO or under the other applicable TS requirements. If it is desired to perform the special operation under the provisions of the Test Exception LCO, the requirements of the Test Exception LCO shall be followed.

BASES

~~LCO 3.0.8~~

~~LCO 3.0.8 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.~~

~~This Specification delineates the requirements 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 3.0.8, 1 hour is allowed to prepare for an orderly plan of action which optimizes plant safety and equipment restoration. The Shutdown Safety Status Trees provide a systematic method to explicitly determine the status of the plant during shutdown conditions, after entering MODE 5. A set of plant parameters is monitored and if any parameter is outside of its defined limits, a transition is made to the Shutdown Emergency Response Guidelines. These guidelines provide preplanned actions for addressing parameters outside defined limits.~~

~~Examples of the required end states specified for inoperable passive systems while in MODES 5 and 6 are provided in Table B 3.0-1, Passive Systems Shutdown MODE Matrix. These requirements are specified in the individual Specifications. The required end states specified for passive systems, when the unit is in MODE 5 or 6, are selected to ensure that the initial conditions and system and equipment availabilities minimize the likelihood and consequences of potential shutdown events.~~

~~ACTIONS required in accordance with LCO 3.0.8 may be terminated and LCO 3.0.8 exited if any of the following occurs:~~

- ~~a. The LCO is now met.~~
- ~~b. A Condition exists for which the Required Actions have now been performed.~~

BASES

LCO 3.0.8 (continued)

~~c. 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 3.0.8 is exited.~~

~~In MODES 5 and 6, LCO 3.0.8 provides actions for Conditions not covered in other Specifications and for multiple concurrent Conditions for which conflicting actions are specified.~~

~~As an example of the application of LCO 3.0.8, see column 2 of Table B 3.0-1, Passive Systems Shutdown MODE Matrix, for the core makeup tank. This example assumes that the plant is initially in MODE 5 with the Reactor Coolant System (RCS) pressure boundary intact. In this plant condition, LCO 3.5.3 requires one core makeup tank to be OPERABLE. The table shows the required end state established by the Required Actions of TS 3.5.3 in the event that the core makeup tank cannot be restored to OPERABLE status.~~

~~For this initial plant shutdown condition with no OPERABLE core makeup tanks, four conditions are identified in TS 3.5.3, with associated Required Actions and Completion Times. If Conditions A, B, and C cannot be completed within the required Completion Times, then Condition D requires immediately initiating action to place the plant in MODE 5 with the RCS pressure boundary open, and with pressurizer level greater than 20 percent.~~

~~LCO 3.0.8 would apply if actions could not immediately be initiated to open the RCS pressure boundary. In this situation, in parallel with the TS 3.5.3 actions to continue to open the RCS pressure boundary, LCO 3.0.8 requires the operators to take actions to restore one core makeup tank to OPERABLE status, and to monitor the Safety System Shutdown Monitoring Trees.~~

~~The Shutdown Status Trees monitor seven key RCS parameters and direct the operators to one of six shutdown ERGs in the event that any of the parameters are outside of allowable limits. The shutdown ERGs identify actions to be taken by the operators to satisfy the critical safety functions for the plant in the shutdown condition, using plant equipment available in this shutdown condition. LCO 3.0.8 monitoring would continue to be required until one core makeup tank is restored to~~

BASES

LCO 3.0.8 (continued)

~~OPERABLE status or the Required Actions for Condition D can be satisfied. In this case, once the RCS pressure boundary is open as required by Condition D, LCO 3.0.8 would be exited.~~

LCO 3.0.8

LCO 3.0.8 establishes conditions under which systems are considered to remain capable of performing their intended safety function when associated snubbers are not capable of providing their associated support function(s). This LCO states that the supported system is not considered to be inoperable solely due to one or more snubbers not capable of performing their associated support function(s). This is appropriate because a limited length of time is allowed for maintenance, testing, or repair of one or more snubbers not capable of performing their associated support function(s) and appropriate compensatory measures are specified in the snubber requirements, which are located outside of the Technical Specifications (TS) under licensee control. The snubber requirements do not meet the criteria in 10 CFR 50.36(c)(2)(ii), and, as such, are appropriate for control by the licensee.

If the allowed time expires and the snubber(s) are unable to perform their associated support function(s), the affected supported system's LCO(s) must be declared not met and the Conditions and Required Actions entered in accordance with LCO 3.0.2.

LCO 3.0.8.a applies when one or more snubbers are not capable of providing their associated support function(s) to a single train or subsystem of a multiple train or subsystem supported system or to a single train or subsystem supported system. LCO 3.0.8.a allows 72 hours to restore the snubber(s) before declaring the supported system inoperable. The 72 hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function and due to the availability of the redundant train of the supported system.

LCO 3.0.8.b applies when one or more snubbers are not capable of providing their associated support function(s) to more than one train or subsystem of a multiple train or subsystem supported system.

BASES

LCO 3.0.8 (continued)

LCO 3.0.8.b allows 12 hours to restore the snubber(s) before declaring the supported system inoperable. The 12 hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function.

LCO 3.0.8 requires that risk be assessed and managed. Industry and NRC guidance on the implementation of 10 CFR 50.65(a)(4) (the Maintenance Rule) does not address seismic risk. However, use of LCO 3.0.8 should be considered with respect to other plant maintenance activities, and integrated into the existing Maintenance Rule process to the extent possible so that maintenance on any unaffected train or subsystem is properly controlled, and emergent issues are properly addressed. The risk assessment need not be quantified, but may be a qualitative awareness of the vulnerability of systems and components when one or more snubbers are not able to perform their associated support function.

LCO 3.0.9

LCO 3.0.9 establishes conditions under which systems described in the Technical Specifications are considered to remain OPERABLE when required barriers are not capable of providing their related support function(s).

Barriers are doors, walls, floor plugs, curbs, hatches, installed structures or components, or other devices, not explicitly described in Technical Specifications that support the performance of the safety function of systems described in the Technical Specifications. This LCO states that the supported system is not considered to be inoperable solely due to required barriers not capable of performing their related support function(s) under the described conditions. LCO 3.0.9 allows 30 days before declaring the supported system(s) inoperable and the LCO(s) associated with the supported system(s) not met. A maximum time is placed on each use of this allowance to ensure that as required barriers are found or are otherwise made unavailable, they are restored. However, the allowable duration may be less than the specified maximum time based on the risk assessment.

BASES

LCO 3.0.9 (continued)

If the allowed time expires and the barriers are unable to perform their related support function(s), the supported system's LCO(s) must be declared not met and the Conditions and Required Actions entered in accordance with LCO 3.0.2.

This provision does not apply to barriers which support ventilation systems or to fire barriers. The Technical Specifications for ventilation systems provide specific Conditions for inoperable barriers. Fire barriers are addressed by other regulatory requirements and associated plant programs. This provision does not apply to barriers which are not required to support system OPERABILITY (see NRC Regulatory Issue Summary 2001-09, "Control of Hazard Barriers," dated April 2, 2001).

The provisions of LCO 3.0.9 are justified because of the low risk associated with required barriers not being capable of performing their related support function. This provision is based on consideration of the following initiating event categories:

----- REVIEWER'S NOTE -----
LCO 3.0.9 may be expanded to other initiating event categories provided plant-specific analysis demonstrates that the frequency of the additional initiating events is bounded by the generic analysis or if plant-specific approval is obtained from the NRC.

- Loss of coolant accidents;
- High energy line breaks;
- Feedwater line breaks;
- Internal flooding;
- External flooding;
- Turbine missile ejection; and
- Tornado or high wind.

The risk impact of the barriers which cannot perform their related support function(s) must be addressed pursuant to the risk assessment and management provision of the Maintenance Rule, 10 CFR 50.65 (a)(4), and the associated implementation guidance, Regulatory Guide 1.182, "Assessing and Managing Risk Before

BASES

LCO 3.0.9 (continued)

Maintenance Activities at Nuclear Power Plants." Regulatory Guide 1.182 endorses the guidance in Section 11 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." This guidance provides for the consideration of dynamic plant configuration issues, emergent conditions, and other aspects pertinent to plant operation with the barriers unable to perform their related support function(s). These considerations may result in risk management and other compensatory actions being required during the period that barriers are unable to perform their related support function(s).

LCO 3.0.9 may be applied to one or more trains or subsystems of a system supported by barriers that cannot provide their related support function(s), provided that risk is assessed and managed (including consideration of the effects on Large Early Release and from external events). If applied concurrently to more than one train or subsystem of a multiple train or subsystem supported system, the barriers supporting each of these trains or subsystems must provide their related support function(s) for different categories of initiating events. For example, LCO 3.0.9 may be applied for up to 30 days for more than one train of a multiple train supported system if the affected barrier for one train protects against internal flooding and the affected barrier for the other train protects against tornado missiles. In this example, the affected barrier may be the same physical barrier but serve different protection functions for each train.

If during the time that LCO 3.0.9 is being used, the required OPERABLE train or subsystem becomes inoperable, it must be restored to OPERABLE status within 24 hours. Otherwise, the train(s) or subsystem(s) supported by barriers that cannot perform their related support function(s) must be declared inoperable and the associated LCOs declared not met. This 24 hour period provides time to respond to emergent conditions that would otherwise likely lead to entry into LCO 3.0.3 and a rapid plant shutdown, which is not justified given the low probability of an initiating event which would require the barrier(s) not capable of performing their related support function(s). During this 24 hour period, the plant risk associated with the existing conditions is assessed and managed in accordance with 10 CFR 50.65(a)(4).

~~Table B 3.0-1 (page 1 of 2)~~
~~Passive Systems Shutdown MODE Matrix~~

LCO Applicability	Automatic Depressurization System	Core-Makeup Tank	Passive-RHR	IRWST	Containment	Containment Cooling ⁽⁴⁾
MODE-5 RCS pressure boundary intact	9-of-10-paths OPERABLE All-paths-closed	One-CMT OPERABLE	System OPERABLE	One injection flow path and one recirculation sump flow path OPERABLE	Closure capability	Three-water flow-paths OPERABLE
	LCO-3.4.12	LCO-3.5.3	LCO-3.5.5	LCO-3.5.7	LCO-3.6.8	LCO-3.6.7
Required End-State	MODE-5 RCS-pressure boundary open, $\geq$ 20%-pressurizer level	MODE-5 RCS-pressure boundary open, $\geq$ 20%-pressurizer level	MODE-5 RCS-pressure boundary open, $\geq$ 20%-pressurizer level	MODE-5 RCS-pressure boundary intact, $\geq$ 20%-pressurizer level	MODE-5 RCS-pressure boundary intact, $\geq$ 20%-pressurizer level	MODE-5 RCS-pressure boundary intact, $\geq$ 20%-pressurizer level
MODE-5 RCS pressure boundary open-or pressurizer level < 20%	Stages 1, 2, and 3 open 2-stage 4 valves OPERABLE	None	None	One injection flow path and one recirculation sump flow path OPERABLE	Closure capability	Three-water flow-paths OPERABLE
	LCO-3.4.13			LCO-3.5.7	LCO-3.6.8	LCO-3.6.7
Required End-State	MODE-5 RCS pressure boundary open, $\geq$ 20%-pressurizer level			MODE-5 RCS-pressure boundary intact, $\geq$ 20%-pressurizer level	MODE-5 RCS-pressure boundary intact, $\geq$ 20%-pressurizer level	MODE-5 RCS-pressure boundary intact, $\geq$ 20%-pressurizer level
MODE-6 Upper internals in place	Stages 1, 2, and 3 open 2-stage 4 valves OPERABLE	None	None	One injection flow path and one recirculation sump flow path OPERABLE	Closure capability	Three-water flow-paths OPERABLE
	LCO-3.4.13			LCO-3.5.8	LCO-3.6.8	LCO-3.6.7
Required End-State	MODE-6 Upper-internals removed			MODE-6 Refueling-cavity full	MODE-6 Refueling cavity full	MODE-6 Refueling-cavity full

~~Table B 3.0-1 (page 2 of 2)~~
~~Passive Systems Shutdown MODE Matrix~~

LCO Applicability	Automatic Depressurization System	Core Makeup Tank	Passive RHR	IRWST	Containment	Containment Cooling ⁽¹⁾
MODE-6 Upper internals removed	None	None	None	One injection flow path and one recirculation sump flow path OPERABLE	Closure capability	Three water flow paths OPERABLE
Required End-State				LCO 3.5.8 MODE-6 Refueling cavity full	LCO 3.6.8 MODE-6 Refueling cavity full	LCO 3.6.7 MODE-6 Refueling cavity full

(1) Containment cooling via PCS is not required when core decay heat $\leq$ 6.0 MWt.

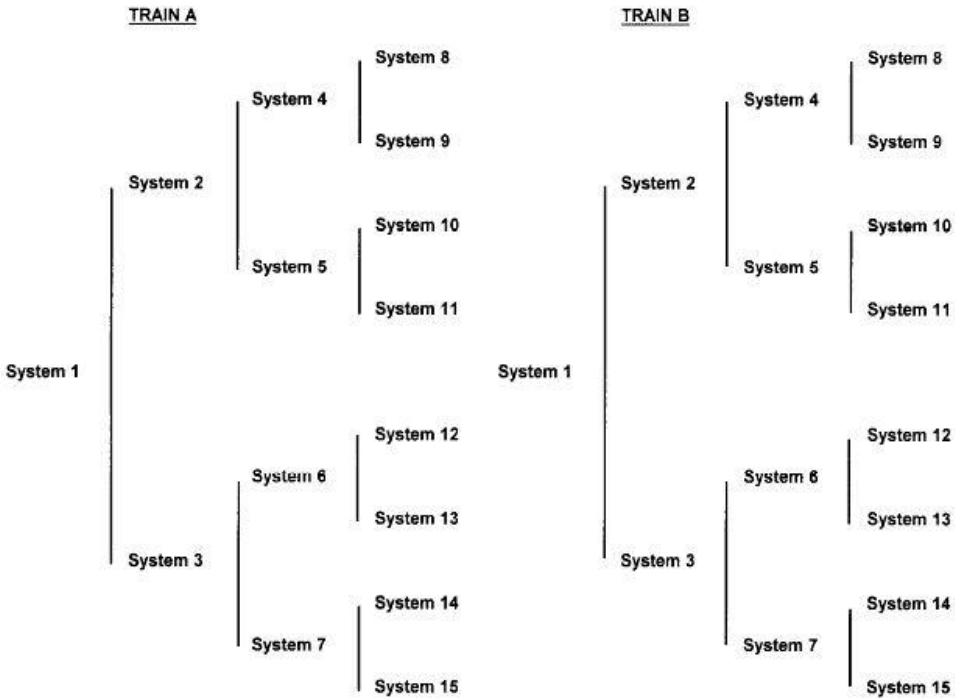


Figure B 3.0-1
Configuration of Trains and Systems

XII. Applicable STS Subsection After Incorporation of this GTST's Modifications

The entire subsection of the Specifications and the Bases associated with this GTST, following incorporation of the modifications, is presented next.

3.0 LIMITING CONDITIONS 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 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, 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; and
- 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.

LCO Applicability

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;
- b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or
- c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent 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.

LCO 3.0.5 Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the test required to demonstrate OPERABILITY.

LCO 3.0.6 When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, an evaluation shall be performed in accordance with Specification 5.5.7, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

LCO Applicability

LCO 3.0.6 (continued)

When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

LCO 3.0.7

Test Exception LCO 3.1.8 allows specified Technical Specification (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with Test Exception LCOs is optional. When a Test Exception LCO is desired to be met but is not met, the ACTIONS of the Test Exception LCO shall be met. When a Test Exception LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall be made in accordance with the other applicable Specifications.

LCO 3.0.8

When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

- a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or
- b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

LCO Applicability

LCO 3.0.9

When one or more required barriers are unable to perform their related support function(s), any supported system LCO(s) are not required to be declared not met solely for this reason for up to 30 days provided that at least one train or subsystem of the supported system is OPERABLE and supported by barriers capable of providing their related support function(s), and risk is assessed and managed. This specification may be concurrently applied to more than one train or subsystem of a multiple train or subsystem supported system provided at least one train or subsystem of the supported system is OPERABLE and the barriers supporting each of these trains or subsystems provide their related support function(s) for different categories of initiating events.

If the required OPERABLE train or subsystem becomes inoperable while this specification is in use, it must be restored to OPERABLE status within 24 hours or the provisions of this specification cannot be applied to the trains or subsystems supported by the barriers that cannot perform their related support function(s).

At the end of the specified period, the required barriers must be able to perform their related support function(s) or the supported system LCO(s) shall be declared not met.

B 3.0 LIMITING CONDITIONS FOR OPERATION (LCO) APPLICABILITY

BASES

LCOs	LCO 3.0.1 through LCO 3.0.9 establish the general requirements applicable to all Specifications and apply at all times, unless otherwise stated.
LCO 3.0.1	LCO 3.0.1 establishes the Applicability statement within each individual Specification as the requirements for when the LCO is required to be met (i.e. when the unit is in the MODES or other specified conditions of the Applicability statement of each Specification.)
LCO 3.0.2	LCO 3.0.2 establishes that upon discovery of a failure to meet an LCO, the associated ACTIONS shall be met. The Completion Time of each Required Action for an ACTIONS Condition is applicable from the point in time that the ACTIONS Condition is entered. The Required Actions establish those remedial measures that must be taken within specified Completion Times when the requirements of an LCO are not met. This specification establishes that: a. Completion of the Required Actions within the specified Completion Times constitutes compliance with a Specification; and b. Completion of the Required Actions is not required when an LCO is met within the specified Completion Time, unless otherwise specified. There are two basic types of Required Actions. The first type of Required Action specifies a time limit in which the LCO must be met. This time limit is the Completion Time to restore an inoperable system or component to OPERABLE status or to restore variables to within specified limits. If this type of Required Action is not completed within the specified Completion Time, a shutdown may be required to place the unit in a MODE or condition in which the Specification is not applicable. (Whether stated as a Required Action or not, correction of the entered Condition is an action that may always be considered upon entering ACTIONS.) The second type of Required Action specifies the remedial measures that permit continued operation of the unit that is not further restricted by the Completion Time. In this case compliance with the Required Actions provides an acceptable level of safety for continued operation.

BASES

LCO 3.0.2 (continued)

Completing the Required Actions is not required when an LCO is met, or is no longer applicable, unless otherwise stated in the individual Specifications.

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 reasons for intentionally relying on the ACTIONS include, but are not limited to, performance of Surveillances, preventive maintenance, corrective maintenance, or investigation of operational problems. Entering ACTIONS for these reasons must be done in a manner that does not compromise safety. Intentional entry into ACTIONS should not be made for operational convenience. Additionally, if intentional entry into ACTIONS would not result in redundant equipment being inoperable alternatives should be used instead. Doing so limits the time both subsystems/trains of a safety function are inoperable and limits the time conditions could exist which may result in LCO 3.0.3 being entered. 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.

BASES

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 into LCO 3.0.3, 1 hour is allowed to prepare for an orderly shutdown before initiating a change in unit operation. This includes time to permit the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid. 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 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. A Condition exists for which the Required Actions have now been performed.

BASES

LCO 3.0.3 (continued)

- c. 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 Specification 3.0.3 allow 37 hours for the unit to be in MODE 5 when a shutdown is 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 the next lower MODE applies. If a lower MODE is reached in less time than allowed, however, the total allowable time to reach MODE 5, or other applicable MODE is not reduced. For example, if MODE 3 is reached in 2 hours, then the time allowed for reaching MODE 4 is the next 11 hours, because the total time for reaching MODE 4 is not reduced from the allowable limit of 13 hours. Therefore, if remedial measures are completed that would permit a return to MODE 1, a penalty is not incurred by having to reach 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 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. In MODES 5 and 6, LCO 3.0.8 provides actions for Conditions not covered in other Specifications.

Exceptions to 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.

BASES

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 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 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 permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. Compliance with Required 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 such cases, entry into a MODE or other specified condition in the Applicability may be made in accordance with the provisions of the Required Actions. The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability.

LCO 3.0.4.b allows entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate.

The risk assessment may use quantitative, qualitative, or blended approaches, and the risk assessment will be conducted using the plant program, procedures, and criteria in place to implement 10 CFR 50.65(a)(4), which requires that risk impacts of maintenance activities to be assessed and managed. The risk assessment, for the purposes of LCO 3.0.4 (b), must take into account all inoperable Technical Specification 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 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants." Regulatory Guide 1.182 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

BASES

LCO 3.0.4 (continued)

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 the proposed MODE change is acceptable. Consideration should also be given to the probability of completing restoration such that the requirements of the LCO would be met prior to the expiration of ACTIONS Completion Times that would require exiting the Applicability.

LCO 3.0.4.b may be used with single, or multiple systems and components unavailable. NUMARC 93-01 provides guidance relative to consideration of simultaneous unavailability of multiple systems and components.

The results of the risk assessment shall be considered in determining the acceptability of entering the MODE or other specified condition in the Applicability, and any corresponding risk management actions. The LCO 3.0.4.b risk assessments do not have to be documented.

The Technical Specifications allow continued operation with equipment unavailable in MODE 1 for the duration of the Completion Time. Since this is allowable, and since in general the risk impact in that particular MODE bounds the risk of transitioning into and through the applicable MODES or other specified conditions in the Applicability of the LCO, the use of the LCO 3.0.4.b allowance should be generally acceptable, as long as the risk is assessed and managed as stated above. However, there is a small subset of systems and components that have been determined to be more important to risk and use of the LCO 3.0.4.b allowance is prohibited. The LCOs governing these system and components contain Notes prohibiting the use of LCO 3.0.4.b by stating that LCO 3.0.4.b is not applicable.

LCO 3.0.4.c allows entry into a MODE or other specified condition in the Applicability with the LCO not met based on a Note in the Specification which states LCO 3.0.4.c is applicable. These specific allowances permit entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered do not provide for continued

BASES

LCO 3.0.4 (continued)

operation for an unlimited period of time and a risk assessment has not been performed. This allowance may apply to all the ACTIONS or to a specific Required Action of a Specification. The risk assessments performed to justify the use of LCO 3.0.4.b usually only consider systems and components. For this reason, LCO 3.0.4.c is typically applied to Specifications which describe values and parameters (e.g., [Containment Air Temperature, Containment Pressure, MCPR, Moderator Temperature Coefficient]), and may be applied to other Specifications based on NRC plant-specific approval.

The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability.

The provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that results from any unit shutdown. In this context, a unit shutdown is defined as a change in MODE or other specified condition in the Applicability associated with transitioning from MODE 1 to MODE 2, MODE 2 to MODE 3, MODE 3 to MODE 4, and MODE 4 to MODE 5.

Upon entry into a MODE or other specified condition in the Applicability with the LCO not met, LCO 3.0.1 and LCO 3.0.2 require entry into the applicable Conditions and Required Actions until the Condition is resolved, until the LCO is met, or until the unit is not within the Applicability of the Technical Specification.

Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 3.0.1. Therefore, utilizing LCO 3.0.4 is not a violation of SR 3.0.1 or SR 3.0.4 for any Surveillances that have not been performed on inoperable equipment. However, SRs must be met to ensure OPERABILITY prior to declaring the associated equipment OPERABLE (or variable within limits) and restoring compliance with the affected LCO.

BASES

LCO 3.0.5	LCO 3.0.5 establishes the allowance of restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Specification is to provide an exception to LCO 3.0.2 (e.g., to not comply with the applicable Required Action(s)) to allow the performance of Surveillance Requirements to demonstrate: a. The OPERABILITY of the equipment being returned to service; or b. The OPERABILITY of other equipment. The administrative controls ensure the time the equipment is returned to service in conflict with the requirements of the ACTIONS is limited to the time absolutely necessary to perform the required testing to demonstrate OPERABILITY. This specification does not provide time to perform any other preventive or corrective maintenance. An example of demonstrating the OPERABILITY of the equipment being returned to service is reopening a containment isolation valve that has been closed to comply with Required Actions and must be reopened to perform the SRs. An example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to prevent the trip function from occurring during the performance of an SR on another channel in the other trip system. A similar example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to permit the logic to function and indicate the appropriate response during the performance of an SR on another channel in the same trip system.
LCO 3.0.6	LCO 3.0.6 establishes an exception to LCO 3.0.2 for supported systems that have a support system LCO specified in the Technical Specifications (TS). This exception is provided because LCO 3.0.2 would require that the Conditions and Required Actions of the associated inoperable supported system LCO be entered solely due to the inoperability of the support system. This exception is justified because the actions that are required to ensure the unit is maintained in a safe condition are specified in the support system LCO's Required Actions. These Required Actions may include entering the supported system's Conditions and Required Actions or may specify other Required Actions.

BASES

LCO 3.0.6 (continued)

When a support system is inoperable and there is an LCO specified for it in the TS, the supported system(s) are required to be declared inoperable if determined to be inoperable as a result of the support system inoperability. However it is not necessary to enter into the supported systems' Conditions and Required Actions unless directed to do so by the support system's Required Actions. The potential confusion and inconsistency of requirements related to the entry into multiple support and supported systems' LCOs' Conditions and Required Actions are eliminated by providing all the actions that are necessary to ensure the unit is maintained in a safe condition in the support system's Required Actions.

However, there are instances where a support system's Required Action may either direct a supported system to be declared inoperable or direct entry into Conditions and Required Actions for the supported system. This may occur immediately or after some specified delay to perform some other Required Action. Regardless of whether it is immediate or after some delay, when a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

Specification 5.5.7, "Safety Function Determination Program (SFDP)," ensures loss of safety function is detected and appropriate actions are taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other limitations, remedial actions, or compensatory actions may be identified as a result of the support system inoperability and corresponding exception to entering supported system Conditions and Required Actions. The SFDP implements the requirements of LCO 3.0.6.

The following examples use Figure B 3.0-1 to illustrate loss of safety function conditions that may result when a support system is inoperable. In this figure, the fifteen systems that comprise Train A are independent and redundant to the fifteen systems that comprise Train B. To correctly use the figure to illustrate the SFDP provisions for a cross train check, the figure establishes a relationship between support and supported systems as follows: the figure shows System 1 as a support system for System 2 and System 3; System 2 as a support system for System 4 and System 5; and System 4 as a support system for System 8 and System 9. Specifically, a loss of safety function may exist when a support system is inoperable and:

BASES

LCO 3.0.6 (continued)

- a. A system redundant to system(s) supported by the inoperable support system is also inoperable (EXAMPLE B 3.0.6-1),
- b. A system redundant to system(s) in turn supported by the inoperable supported system is also inoperable (EXAMPLE B 3.0.6-2), or
- c. A system redundant to support system(s) for the supported systems (a) and (b) above is also inoperable (EXAMPLE B 3.0.6-3).

For the following examples, refer to Figure B 3.0-1.

EXAMPLE B 3.0.6-1

If System 2 of Train A is inoperable and System 5 of Train B is inoperable, a loss of safety function exists in Systems 5, 10, and 11.

EXAMPLE B 3.0.6-2

If System 2 of Train A is inoperable, and System 11 of Train B is inoperable, a loss of safety function exists in System 11.

EXAMPLE B 3.0.6-3

If System 2 of Train A is inoperable, and System 1 of Train B is inoperable, a loss of safety function exists in Systems 2, 4, 5, 8, 9, 10 and 11.

If an evaluation determines that a loss of safety function exists, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

This loss of safety function does not require the assumption of additional single failures or loss of offsite power. Since operations are being restricted in accordance with the ACTIONS of the support system, any resulting temporary loss of redundancy or single failure protection is taken into account.

When loss of safety function is determined to exist, and the SFDP requires entry into the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists, consideration must be

BASES

LCO 3.0.6 (continued)

given to the specific type of function affected. Where a loss of function is solely due to a single Technical Specification support system (e.g., loss of automatic start due to inoperable instrumentation, or loss of pump suction source due to low tank level) the appropriate LCO is the LCO for the support system. The ACTIONS for a support system LCO adequately address the inoperabilities of that system without reliance on entering its supported system LCO. When the loss of function is the result of multiple support systems, the appropriate LCO is the LCO for the support system.

LCO 3.0.7

There are certain special tests and operations required to be performed at various times over the life of the unit. These special tests and operations are necessary to demonstrate select unit performance characteristics, to perform special maintenance activities, and to perform special evolutions. Test Exception LCO 3.1.8 allows specified Technical Specification (TS) requirements to be changed to permit performance of these special tests and operations, which otherwise could not be performed if required to comply with the requirements of these TS. Unless otherwise specified, all the other TS requirements remain unchanged. This will ensure all appropriate requirements of the MODE or other specified condition not directly associated with or required to be changed to perform the special test or operation will remain in effect.

The Applicability of a Test Exception LCO represents a condition not necessarily in compliance with the normal requirements of the TS. Compliance with Test Exception LCOs is optional. A special operation may be performed either under the provisions of the appropriate Test Exception LCO or under the other applicable TS requirements. If it is desired to perform the special operation under the provisions of the Test Exception LCO, the requirements of the Test Exception LCO shall be followed.

BASES

LCO 3.0.8 LCO 3.0.8 establishes conditions under which systems are considered to remain capable of performing their intended safety function when associated snubbers are not capable of providing their associated support function(s). This LCO states that the supported system is not considered to be inoperable solely due to one or more snubbers not capable of performing their associated support function(s). This is appropriate because a limited length of time is allowed for maintenance, testing, or repair of one or more snubbers not capable of performing their associated support function(s) and appropriate compensatory measures are specified in the snubber requirements, which are located outside of the Technical Specifications (TS) under licensee control. The snubber requirements do not meet the criteria in 10 CFR 50.36(c)(2)(ii), and, as such, are appropriate for control by the licensee.

If the allowed time expires and the snubber(s) are unable to perform their associated support function(s), the affected supported system's LCO(s) must be declared not met and the Conditions and Required Actions entered in accordance with LCO 3.0.2.

LCO 3.0.8.a applies when one or more snubbers are not capable of providing their associated support function(s) to a single train or subsystem of a multiple train or subsystem supported system or to a single train or subsystem supported system. LCO 3.0.8.a allows 72 hours to restore the snubber(s) before declaring the supported system inoperable. The 72 hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function and due to the availability of the redundant train of the supported system.

LCO 3.0.8.b applies when one or more snubbers are not capable of providing their associated support function(s) to more than one train or subsystem of a multiple train or subsystem supported system.

LCO 3.0.8.b allows 12 hours to restore the snubber(s) before declaring the supported system inoperable. The 12 hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function.

BASES

LCO 3.0.8 (continued)

LCO 3.0.8 requires that risk be assessed and managed. Industry and NRC guidance on the implementation of 10 CFR 50.65(a)(4) (the Maintenance Rule) does not address seismic risk. However, use of LCO 3.0.8 should be considered with respect to other plant maintenance activities, and integrated into the existing Maintenance Rule process to the extent possible so that maintenance on any unaffected train or subsystem is properly controlled, and emergent issues are properly addressed. The risk assessment need not be quantified, but may be a qualitative awareness of the vulnerability of systems and components when one or more snubbers are not able to perform their associated support function.

LCO 3.0.9

LCO 3.0.9 establishes conditions under which systems described in the Technical Specifications are considered to remain OPERABLE when required barriers are not capable of providing their related support function(s).

Barriers are doors, walls, floor plugs, curbs, hatches, installed structures or components, or other devices, not explicitly described in Technical Specifications that support the performance of the safety function of systems described in the Technical Specifications. This LCO states that the supported system is not considered to be inoperable solely due to required barriers not capable of performing their related support function(s) under the described conditions. LCO 3.0.9 allows 30 days before declaring the supported system(s) inoperable and the LCO(s) associated with the supported system(s) not met. A maximum time is placed on each use of this allowance to ensure that as required barriers are found or are otherwise made unavailable, they are restored. However, the allowable duration may be less than the specified maximum time based on the risk assessment.

If the allowed time expires and the barriers are unable to perform their related support function(s), the supported system's LCO(s) must be declared not met and the Conditions and Required Actions entered in accordance with LCO 3.0.2.

This provision does not apply to barriers which support ventilation systems or to fire barriers. The Technical Specifications for ventilation systems provide specific Conditions for inoperable barriers. Fire barriers

BASES

LCO 3.0.9 (continued)

are addressed by other regulatory requirements and associated plant programs. This provision does not apply to barriers which are not required to support system OPERABILITY (see NRC Regulatory Issue Summary 2001-09, "Control of Hazard Barriers," dated April 2, 2001).

The provisions of LCO 3.0.9 are justified because of the low risk associated with required barriers not being capable of performing their related support function. This provision is based on consideration of the following initiating event categories:

----- REVIEWER'S NOTE -----
LCO 3.0.9 may be expanded to other initiating event categories provided plant-specific analysis demonstrates that the frequency of the additional initiating events is bounded by the generic analysis or if plant-specific approval is obtained from the NRC.

- Loss of coolant accidents;
- High energy line breaks;
- Feedwater line breaks;
- Internal flooding;
- External flooding;
- Turbine missile ejection; and
- Tornado or high wind.

The risk impact of the barriers which cannot perform their related support function(s) must be addressed pursuant to the risk assessment and management provision of the Maintenance Rule, 10 CFR 50.65 (a)(4), and the associated implementation guidance, Regulatory Guide 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants." Regulatory Guide 1.182 endorses the guidance in Section 11 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." This guidance provides for the consideration of dynamic plant configuration issues, emergent conditions, and other aspects pertinent to plant operation with the barriers unable to perform their related support function(s). These considerations may result in risk management and other compensatory actions being required during the period that barriers are unable to perform their related support function(s).

BASES

LCO 3.0.9 (continued)

LCO 3.0.9 may be applied to one or more trains or subsystems of a system supported by barriers that cannot provide their related support function(s), provided that risk is assessed and managed (including consideration of the effects on Large Early Release and from external events). If applied concurrently to more than one train or subsystem of a multiple train or subsystem supported system, the barriers supporting each of these trains or subsystems must provide their related support function(s) for different categories of initiating events. For example, LCO 3.0.9 may be applied for up to 30 days for more than one train of a multiple train supported system if the affected barrier for one train protects against internal flooding and the affected barrier for the other train protects against tornado missiles. In this example, the affected barrier may be the same physical barrier but serve different protection functions for each train.

If during the time that LCO 3.0.9 is being used, the required OPERABLE train or subsystem becomes inoperable, it must be restored to OPERABLE status within 24 hours. Otherwise, the train(s) or subsystem(s) supported by barriers that cannot perform their related support function(s) must be declared inoperable and the associated LCOs declared not met. This 24 hour period provides time to respond to emergent conditions that would otherwise likely lead to entry into LCO 3.0.3 and a rapid plant shutdown, which is not justified given the low probability of an initiating event which would require the barrier(s) not capable of performing their related support function(s). During this 24 hour period, the plant risk associated with the existing conditions is assessed and managed in accordance with 10 CFR 50.65(a)(4).

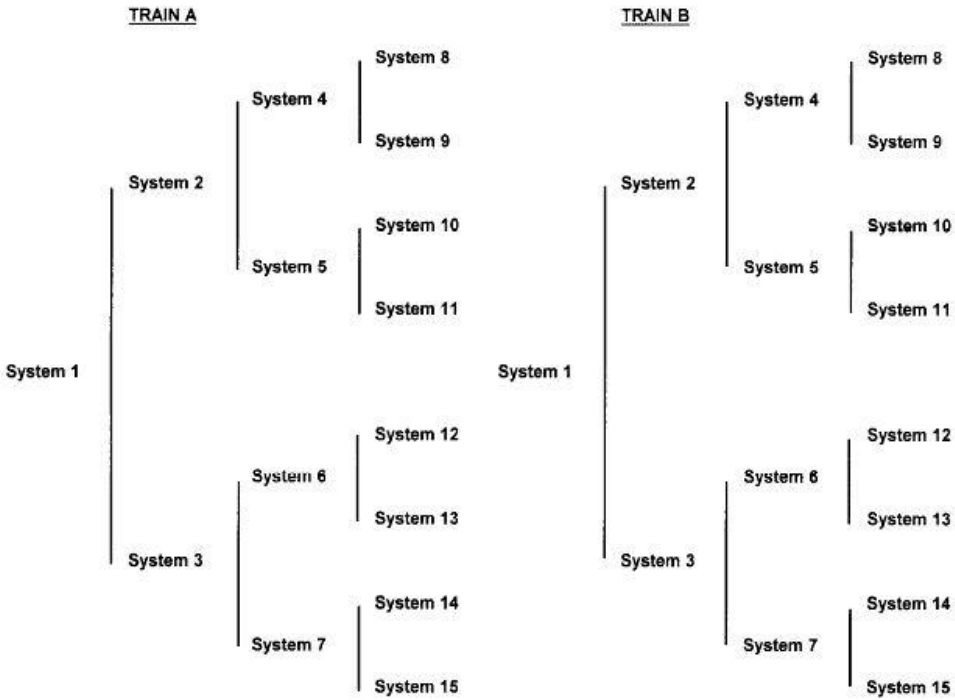


Figure B 3.0-1
Configuration of Trains and Systems