

AGENDA

TSB/NEI RITSTF Meeting

October 12, 2001 from 8:30 AM to 4:00 PM, in O-13B4

- o **Status of Initiatives**
 - Initiative 1, End States
 - Content of TSTF
 - BWR RAI responses
 - Initiative 3, SR 3.0.4 (Mode Restraint) Flexibility
 - Content of TSTF-359 R6
 - Initiative 4, RI AOTs with CRMP
 - Industry presentation of proposed approach
 - Initiative 5, STI Evaluation Methodology
 - Initial feedback on NRC response to industry paper
 - Initiative 7, Non-TS Support System Operability Impact on TS System
 - Schedule to submit
 - Initiative 6, LCO 3.0.3 Actions and Completion Times
 - Status?
- o **TS AOT Changes; RG 1.177 Tier 2 Limitations**
 - Reflection of Configuration Limitations in TS
- o **Schedule Next Meeting**
- o **Closing Comments**

Attachment 1Comparison of CEOG-152, CE NSPD-1186 and the NRC's July 17, 2001 Safety Evaluation

General:

1. Section 6.0 of the Safety Evaluation states, "To be consistent with the staff's approval, any licensee requesting to operate in accordance with the CEOG request, as approved in this safety evaluation, should commit to operate in accord with the following stipulations." Each of these stipulations are addressed below.
 - a. "Entry into the shutdown modes approved in this safety evaluation should be for the primary purpose of accomplishing the short duration repairs which necessitated exiting the original operating mode." Implementation: As stated in the Topical, the revised end states were requested in order to minimize the time in which a plant is not in power operation. Longer duration repairs will often necessitate entry into MODE 5 either due to decreasing decay heat or to accomplish other maintenance in parallel with the original repair.
 - b. "Unless exceptions are stated in the individual TS descriptions of Section 5 of Reference 6, operation as approved in this safety evaluation should be limited to an entry that is initiated by inoperability of a single train of equipment or a restriction on a plant operational parameter." Implementation: The conditions under which the revised end states may be applied are described in the Traveler.
 - c. "Licensees should include the restrictions and guidance documented in Section 5.5 and Table 5.5-1 of Reference 6 in appropriate plant procedures and administrative controls when the plant is being operated in accordance with the proposed end states. Procedures and/or controls should include actions to expeditiously exit a risk-significant configuration in case such actions should be needed." Implementation: This restriction will be managed through the program in place to implement 10 CFR 50.65(a)(4).
 - d. "Entry and use of the proposed changes should be performed in accordance with the requirements of 10 CFR 50.65(a)(4). This should include a risk assessment with respect to performance of key shutdown safety functions as described in Section 3 of this safety evaluation." Implementation: This restriction will be managed through the program in place to implement 10 CFR 50.65(a)(4).
 - e. "The following conditions should be met unless exceptions are identified in Section 5 of this SE:
 - i. Should SG cooling be lost while operating in Mode 4, there should be sufficient water in the SGs and operational procedures shall exist to ensure that long-term SDC can be initiated.
 - ii. Uncontrolled loss-of-inventory events should be minimized by in-depth planning, maintaining the RCS at its nominal inventory and configuration control. In-depth event response capability, such as inventory addition, procedures, and training, should be provided.
 - iii. The LTOP and SDC are not aligned when the plant is operated in Mode 4 on SG cooling unless the plant is being transitioned to or from SDC operation.

LTOP shall be operational when the SDC system is hydraulically connected to the RCS.”

Implementation: These items are part of standard operational practice developed in response to the loss of shutdown cooling and loss of RCS inventory initiatives. LTOP will be aligned when required by the Technical Specifications. The risks associated with transitioning from MODE 4 SG heat removal to MODE 4 SDC heat removal are required to be assessed and managed by 10 CFR 50.65(a)(4).

- f. “The RCS pressure boundary should remain functional and, if isolated from the SDC system, should be capable of operating with pressure relief via the pressurizer safety valves.” Implementation: If the RCS pressure boundary is not functional, LCO 3.4.13 requires a plant shutdown. RCS pressure relief requirements are contained in LCO 3.4.10, Pressurizer Safety Valves, 3.4.11, Pressurizer PORVs, and 3.4.12, LTOP.
- g. “The primary purpose of the CEOG request is to allow corrective maintenance in an operating mode consistent with safe operation after an AOT has been exceeded and, secondarily, to minimize the correction time so that the plant can be restored to power operation. Ordinarily, conditions addressed in this request, and in this SE, involve failures that result in a degraded plant condition. Consequently, with respect to additional licensee outage activities that could affect the safe conduct of operations and that are not directly required for correction of the failure(s) that caused the AOT to be exceeded, a licensee should:
- i. Perform a safety assessment in accordance with the maintenance rule prior to undertaking such additional activities.
 - ii. If conditions change so that the safety assessment is no longer valid, to suspend all such additional activities via a process consistent with safety until such time as the assessment has been re-performed and is again valid.”

Implementation: This restriction will be managed through the program in place to implement 10 CFR 50.65(a)(4).

In summary, the stipulations contained in Section 6.0 of the SE are addressed by existing Technical Specifications, other regulatory initiatives, or the requirements of 10 CFR 50.65(a)(4). No restrictions in the Traveler are needed to address these stipulations.

2. In the majority of the individual TS evaluations in the Topical and the NRC’s SE, it was stated that there was risk benefit to remaining in MODE 4 on SG heat removal by averting the risks associated with the alignment of the SDC system. This information is not placed in the revised TS or Bases. LCO 3.4.6, RCS Loops – MODE 4, allows SG heat removal, SDC heat removal, or a combination of SG and SDC heat removal. The risks associated with transitioning from MODE 4 SG heat removal to MODE 4 SDC heat removal are required to be assessed and managed by 10 CFR 50.65(a)(4). Therefore, it is unnecessary to repeat those requirements in the various TS and would be in conflict with LCO 3.4.6.

Industry/TSTF Standard Technical Specification Change Traveler

Increase Flexibility in MODE Restraints

Classification: 1) Technical Change

 Priority 1) High

 NUREGs Affected: 1430 1431 1432 1433 1434

Description:

ITS LCO 3.0.4 is revised to allow entry into a MODE or other specified condition in the Applicability while relying on the associated ACTIONS, provided that there is risk evaluation performed which justifies the use of LCO 3.0.4 or the ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. The current ITS 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. SR 3.0.4 is revised to reflect the concepts of the change to LCO 3.0.4.

Justification:

 See Attached.

Industry Contact:	Clarkson, Noel	(864) 855-3077	ntclarks@duke-energy.com
NRC Contact:	Beckner, Bill	(301) 415-1161	wdb@nrc.gov

Revision History
OG Revision 0 Revision Status: Closed

Revision Proposed by: RITSTF

 Revision Description:
 Original Issue

Owners Group Review Information

Date Originated by OG: 30-Aug-99

 Owners Group Comments
 (No Comments)

 Owners Group Resolution: Superceded Date:

OG Revision 1 Revision Status: Closed

Revision Proposed by: RITSTF

 Revision Description:
 Revision 1 was created to incorporate the comments of the RITSTF. The major changes include the deletion of the Tables from the Traveler and the determination that the proposed change is not an exception to SR 3.0.1, but rather a failure to meet SR 3.0.1.

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OG Revision 1**Revision Status: Closed****Owners Group Review Information**

Date Originated by OG: 06-Oct-99

Owners Group Comments
(No Comments)

Owners Group Resolution: Superceded Date:

OG Revision 2**Revision Status: Closed**

Revision Proposed by: TSTF

Revision Description:

Revision 2 was created to incorporate the comments of the TSTF and the industry. The major changes include 1) changes to the Bases to make the terminology consistent with the LCO and SR requirements, and 2) other editorial changes.

Owners Group Review Information

Date Originated by OG: 24-Nov-99

Owners Group Comments
(No Comments)

Owners Group Resolution: Superceded Date:

TSTF Review Information

TSTF Received Date: 25-Oct-99 Date Distributed for Review

OG Review Completed: BWO WOG CEOG BWROGTSTF Comments:
(No Comments)

TSTF Resolution: Date:

OG Revision 3**Revision Status: Closed**

Revision Proposed by: TSTF

Revision Description:

Revision 3 was created to incorporate further comments of the TSTF and the Industry. The major changes include (1) deletion of SR 3.0.4 and Bases SR 3.0.4 insert regarding failure of SR 3.0.1 due to the inconsistency of interpretation of meaning of the insert and the determination that the interrelationships need no further explanation, and (2) minor wording changes for clarity.

TSTF Review Information

TSTF Received Date: 08-Nov-99 Date Distributed for Review 08-Nov-99

OG Review Completed: BWO WOG CEOG BWROGTSTF Comments:
(No Comments)

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OG Revision 3**Revision Status: Closed**

TSTF Resolution: Approved Date: 09-Nov-99

NRC Review Information

NRC Received Date: 17-Nov-99

NRC Comments:

(No Comments)

Final Resolution: Superseded by Revision

Final Resolution Date: 14-Feb-00

TSTF Revision 1**Revision Status: Closed**

Revision Proposed by: TSTF

Revision Description:

The Description and Justification are completely replaced to address the NRC's request for sufficient information to support creation of an SER for this change.

TSTF Review Information

TSTF Received Date: 15-Feb-00 Date Distributed for Review 15-Feb-00

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Superseded Date: 26-Jun-00

TSTF Revision 2**Revision Status: Closed**

Revision Proposed by: TSTF

Revision Description:

Revised Description, Justification, and Inserts to address Industry comments.

TSTF Review Information

TSTF Received Date: 26-Jun-00 Date Distributed for Review 26-Jun-00

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Superseded Date: 16-Aug-00

TSTF Revision 3**Revision Status: Closed**

Revision Proposed by: RITSTF

Revision Description:

The following changes were made:

Proposed Change:

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TSTF Revision 3**Revision Status: Closed**

1. First paragraph, following "(b) After performance of a risk evaluation", Added: after performance of a risk evaluation, consideration of the results, and establishment of risk management actions if appropriate.
2. Third paragraph, replaced second sentence with following: The risk evaluation may use quantitative, qualitative, or blended approaches, and should be consistent with the approach of Regulatory Guide 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants". The results of the risk evaluation shall be considered in determining the acceptability of the mode change, and any corresponding risk management actions.
3. Deleted last sentence of third paragraph.
4. Fourth paragraph: Deleted sentence beginning "Acceptable risk", and next sentence (1.174 reference). Replaced with "Regulatory guide 1.182 addresses general guidance for conduct of the risk evaluation, 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 unacceptable."
5. Last sentence of paragraph is clarified to state that actions may include changing modes. "determine safest course of action" is replaced with "determine the risk impact, and the need for risk management actions as appropriate."

Justification:

1. Second paragraph, first sentence. The phrase "minimizing risk" is replaced with "maintaining acceptable plant risk."
2. Paragraph beginning "In addition." The reference to the CEOG end state report is eliminated and the following is substituted, "the additional mitigation capability provided by steam driven systems at higher modes." The statement that a risk evaluation would only be required if the risk is increased is circular logic and is deleted.

Effect on Risk-Informed Analysis:

1. Replaced the first paragraph with the following: "A quantitative, qualitative, or blended risk evaluation should be performed to assess the risk impact of the mode change, based on the specific plant configuration at that time. The following table, developed for CE plants, shows the results of a qualitative risk analysis taking into account the impact on initiating event frequency and mitigation capability as a function of plant mode. From such an evaluation, systems/components can be identified whose unavailability results in an equal or greater risk impact in Modes 2-4 than in Mode 1. For these systems/components, it would be generally acceptable to utilize the 3.0.4 exemption. However, the applicability of the table should be reviewed with respect to the actual plant configuration at that time. Entry into more than one 3.0.4 exemption at the same time, or for plant systems/components identified in the table as potentially higher risk for mode 1 operation, would require a more rigorous analysis, and consideration of risk management actions as discussed in Regulatory Guide 1.182."
2. Deleted the second paragraph.
3. Deleted paragraph beginning, "Based upon a general review of the San Onofre PRA."

TS changes: - Inserts 1, 2, 3, and 4

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TSTF Revision 3**Revision Status: Closed**

1. Revised Inserts to reflect changes described in "Proposed Changes," above.

TSTF Review Information

TSTF Received Date: 16-Aug-00 Date Distributed for Review 16-Aug-00

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Date:

TSTF Revision 4**Revision Status: Closed**

Revision Proposed by: TSTF

Revision Description:

Revised the justification to apply to all NUREGs, not just the CEOG NUREG. Revised the LCO 3.0.4 and SR 3.0.4 changes to require determination of the acceptability of MODE change, expanded MODE descriptions to address both PWRs and BWRs, eliminated reference to the San Onofre evaluation and substituted Owners Groups evaluations,

TSTF Review Information

TSTF Received Date: 20-Aug-00 Date Distributed for Review

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Superceeded Date: 22-Jan-01

TSTF Revision 5**Revision Status: Closed**

Revision Proposed by: RITSTF

Revision Description:

1 - Indicated that the attached reports (Attachments 1 - 4) are generic and that the individual plants may perform plant specific evaluations along with the TSTF.

2 - Included a statement in the Bases: "The following is a list of those systems that have been generically determined to be risk significant systems and do not typically have the LCO 3.0.4 flexibility allowed."

System	MODE or other Specified Condition in the Applicability
Diesel Generators	1, 2, 3, 4, 5, 6

(Owners Groups Specific Information Will Be Provided In Each NUREG Bases)

3. Added a sentence in the TSTF that clearly states that the Bases will be plant specific.

4. Included a statement that the LCO 3.0.4 exception typically only applies to systems and components and that values and parameters are not addressed by LCO 3.0.4.

5. Made statement in the Bases that the list of parameter / value exclusions can be found in other "licensee

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TSTF Revision 5**Revision Status: Closed**

controlled documents."

6. Provided a statement in the Bases that TSTF-359 acknowledges the previous flexibility some plants may have had for LCO 3.0.4 exceptions and application and that each plant may use plant-specific justification to retain those previous flexibilities.

TSTF Review Information

TSTF Received Date: 22-Jan-01 Date Distributed for Review 02-Mar-01

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 02-Mar-01

NRC Review Information

NRC Received Date: 02-Mar-01

NRC Comments:

The NRC provided questions in a meeting between the NRC and the RITSTF on 7/30/01 and in a Request for Additional Information dated 8/14/01.

Final Resolution: Superseded by Revision

Final Resolution Date:

TSTF Revision 6**Revision Status: Active****Next Action: TSTF**

Revision Proposed by: RITSTF

Revision Description:

TSTF-359, Revision 6 - Draft for Industry Review and NRC comment

This revision was developed for Industry and NRC review and comment. This is not the formal TSTF-359, Revision 6.

This revision made many changes that were proposed in large part by comments from the Industry and comments from the NRC, both at the 7/30/01 NRC / RITSTF meeting and in the NRC Request for Additional Information dated 8/14/01. The changes address:

- 1) Consistency of terminology
- 2) NRC comments and questions
- 3) Additional clarification and justification
- 4) Standardization of OG Tables, and
- 5) Bases revisions to support plant-specific adoption.

TSTF Review Information

TSTF Received Date: 29-Sep-01 Date Distributed for Review 29-Sep-01

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TSTF Revision 6

Revision Status: Active

Next Action: TSTF

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution:

Date:

Incorporation Into the NUREGs

File to BBS/LAN Date:

TSTF Informed Date:

TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

LCO 3.0.4	LCO Applicability	
LCO 3.0.4 Bases	LCO Applicability	
SR 3.0.4	SR Applicability	
SR 3.0.4 Bases	SR Applicability	
Action 3.3.17	PAM Instrumentation	NUREG(s)- 1430 Only
Action 3.3.17 Bases	PAM Instrumentation	NUREG(s)- 1430 Only
Action 3.3.18	Remote Shutdown System	NUREG(s)- 1430 Only
Action 3.3.18 Bases	Remote Shutdown System	NUREG(s)- 1430 Only
Action 3.4.15.A	RCS Leakage Detection Instrumentation	NUREG(s)- 1430 Only
Action 3.4.15.A Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1430 Only
Action 3.4.15.B	RCS Leakage Detection Instrumentation	NUREG(s)- 1430 Only
Action 3.4.15.B Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1430 Only
Action 3.4.16.A	RCS Specific Activity	NUREG(s)- 1430 Only
Action 3.4.16.A Bases	RCS Specific Activity	NUREG(s)- 1430 Only
Action 3.7.4.A	AVVs	NUREG(s)- 1430 Only
Action 3.7.4.A Bases	AVVs	NUREG(s)- 1430 Only
Action 3.3.3	PAM Instrumentation	NUREG(s)- 1431 Only
Action 3.3.3 Bases	PAM Instrumentation	NUREG(s)- 1431 Only

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Action 3.3.4	Remote Shutdown System	NUREG(s)- 1431 Only
Action 3.3.4 Bases	Remote Shutdown System	NUREG(s)- 1431 Only
Action 3.4.11	Pressurizer PORVs	NUREG(s)- 1431 Only
Action 3.4.11 Bases	Pressurizer PORVs	NUREG(s)- 1431 Only
Action 3.4.15.A	RCS Leakage Detection Instrumentation	NUREG(s)- 1431 Only
Action 3.4.15.A Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1431 Only
Action 3.4.15.B	RCS Leakage Detection Instrumentation	NUREG(s)- 1431 Only
Action 3.4.15.B Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1431 Only
Action 3.4.16.A	RCS Specific Activity	NUREG(s)- 1431 Only
Action 3.4.16.A Bases	RCS Specific Activity	NUREG(s)- 1431 Only
Action 3.6.8.A	Hydrogen Recombiners (Atmospheric, Subatmospheric, Ice Condenser, and Dual)	NUREG(s)- 1431 Only
Action 3.6.8.A Bases	Hydrogen Recombiners (Atmospheric, Subatmospheric, Ice Condenser, and Dual)	NUREG(s)- 1431 Only
Action 3.6.9.A	HMS (Atmospheric, Ice Condenser, and Dual)	NUREG(s)- 1431 Only
Action 3.6.9.A Bases	HMS (Atmospheric, Ice Condenser, and Dual)	NUREG(s)- 1431 Only
Action 3.7.4.A	ADVs	NUREG(s)- 1431 Only
Action 3.7.4.A Bases	ADVs	NUREG(s)- 1431 Only
Action 3.3.1.B	RPS Instrumentation - Operating (Analog)	NUREG(s)- 1432 Only
Action 3.3.1.B	RPS Instrumentation - Operating (Digital)	NUREG(s)- 1432 Only
Action 3.3.1.B Bases	RPS Instrumentation - Operating (Analog)	NUREG(s)- 1432 Only
Action 3.3.1.B Bases	RPS Instrumentation - Operating (Digital)	NUREG(s)- 1432 Only
Action 3.3.1.D	RPS Instrumentation - Operating (Digital)	NUREG(s)- 1432 Only
Action 3.3.1.D Bases	RPS Instrumentation - Operating (Digital)	NUREG(s)- 1432 Only
Action 3.3.1.E	RPS Instrumentation - Operating (Analog)	NUREG(s)- 1432 Only
Action 3.3.1.E Bases	RPS Instrumentation - Operating (Analog)	NUREG(s)- 1432 Only
Action 3.3.2.B	RPS Instrumentation - Shutdown (Analog)	NUREG(s)- 1432 Only
Action 3.3.2.B	RPS Instrumentation - Shutdown (Digital)	NUREG(s)- 1432 Only

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Action 3.3.2.B Bases	RPS Instrumentation - Shutdown (Analog)	NUREG(s)- 1432 Only
Action 3.3.2.B Bases	RPS Instrumentation - Shutdown (Digital)	NUREG(s)- 1432 Only
Action 3.3.2.D	RPS Instrumentation - Shutdown (Analog)	NUREG(s)- 1432 Only
Action 3.3.2.D	RPS Instrumentation - Shutdown (Digital)	NUREG(s)- 1432 Only
Action 3.3.2.D Bases	RPS Instrumentation - Shutdown (Analog)	NUREG(s)- 1432 Only
Action 3.3.2.D Bases	RPS Instrumentation - Shutdown (Digital)	NUREG(s)- 1432 Only
Action 3.3.4.C	ESFAS Instrumentation (Analog)	NUREG(s)- 1432 Only
Action 3.3.4.C Bases	ESFAS Instrumentation (Analog)	NUREG(s)- 1432 Only
Action 3.3.4.E	ESFAS Instrumentation (Analog)	NUREG(s)- 1432 Only
Action 3.3.4.E Bases	ESFAS Instrumentation (Analog)	NUREG(s)- 1432 Only
Action 3.3.5.B	ESFAS Instrumentation (Digital)	NUREG(s)- 1432 Only
Action 3.3.5.B Bases	ESFAS Instrumentation (Digital)	NUREG(s)- 1432 Only
Action 3.3.5.D	ESFAS Instrumentation (Digital)	NUREG(s)- 1432 Only
Action 3.3.5.D Bases	ESFAS Instrumentation (Digital)	NUREG(s)- 1432 Only
Action 3.3.6.B	DG - LOVS (Analog)	NUREG(s)- 1432 Only
Action 3.3.6.B Bases	DG - LOVS (Analog)	NUREG(s)- 1432 Only
Action 3.3.7.B	DG - LOVS (Digital)	NUREG(s)- 1432 Only
Action 3.3.7.B Bases	DG - LOVS (Digital)	NUREG(s)- 1432 Only
Action 3.3.11	PAM Instrumentation (Analog)	NUREG(s)- 1432 Only
Action 3.3.11	PAM Instrumentation (Digital)	NUREG(s)- 1432 Only
Action 3.3.11 Bases	PAM Instrumentation (Analog)	NUREG(s)- 1432 Only
Action 3.3.11 Bases	PAM Instrumentation (Digital)	NUREG(s)- 1432 Only
Action 3.3.12	Remote Shutdown System (Analog)	NUREG(s)- 1432 Only
Action 3.3.12	Remote Shutdown System (Digital)	NUREG(s)- 1432 Only
Action 3.3.12 Bases	Remote Shutdown System (Analog)	NUREG(s)- 1432 Only
Action 3.3.12 Bases	Remote Shutdown System (Digital)	NUREG(s)- 1432 Only
Action 3.4.11	Pressurizer PORVs	NUREG(s)- 1432 Only

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Action 3.4.11 Bases	Pressurizer PORVs	NUREG(s)- 1432 Only
Action 3.4.15.A	RCS Leakage Detection Instrumentation	NUREG(s)- 1432 Only
Action 3.4.15.A Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1432 Only
Action 3.4.15.B	RCS Leakage Detection Instrumentation	NUREG(s)- 1432 Only
Action 3.4.15.B Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1432 Only
Action 3.4.16.A	RCS Specific Activity	NUREG(s)- 1432 Only
Action 3.4.16.A Bases	RCS Specific Activity	NUREG(s)- 1432 Only
Action 3.6.8.A	Hydrogen Rcombiners (Atmospheric and Dual)	NUREG(s)- 1432 Only
Action 3.6.8.A Bases	Hydrogen Rcombiners (Atmospheric and Dual)	NUREG(s)- 1432 Only
Action 3.6.9.A	HMS (Atmospheric and Dual)	NUREG(s)- 1432 Only
Action 3.6.9.A Bases	HMS (Atmospheric and Dual)	NUREG(s)- 1432 Only
Action 3.7.4.A	ADVs	NUREG(s)- 1432 Only
Action 3.7.4.A Bases	ADVs	NUREG(s)- 1432 Only
Action 3.3.3.1	PAM Instrumentation	NUREG(s)- 1433 Only
Action 3.3.3.1 Bases	PAM Instrumentation	NUREG(s)- 1433 Only
Action 3.3.3.2	Remote Shutdown System	NUREG(s)- 1433 Only
Action 3.3.3.2 Bases	Remote Shutdown System	NUREG(s)- 1433 Only
Action 3.3.6.3.A	LLS Instrumentation	NUREG(s)- 1433 Only
Action 3.3.6.3.A Bases	LLS Instrumentation	NUREG(s)- 1433 Only
Action 3.4.6.A	RCS Leakage Detection Instrumentation	NUREG(s)- 1433 Only
Action 3.4.6.A Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1433 Only
Action 3.4.6.B	RCS Leakage Detection Instrumentation	NUREG(s)- 1433 Only
Action 3.4.6.B Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1433 Only
Action 3.4.6.D	RCS Leakage Detection Instrumentation	NUREG(s)- 1433 Only
Action 3.4.6.D Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1433 Only
Action 3.4.7.A	RCS Specific Activity	NUREG(s)- 1433 Only
Action 3.4.7.A Bases	RCS Specific Activity	NUREG(s)- 1433 Only

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Action 3.4.8	RHR and Shutdown Cooling System - Hot Shutdown	NUREG(s)- 1433 Only
Action 3.4.8 Bases	RHR and Shutdown Cooling System - Hot Shutdown	NUREG(s)- 1433 Only
Action 3.6.3.1.A	Primary Containment Hydrogen Recombiners	NUREG(s)- 1433 Only
Action 3.6.3.1.A Bases	Primary Containment Hydrogen Recombiners	NUREG(s)- 1433 Only
Action 3.6.3.2.A	Drywell Cooling System Fans	NUREG(s)- 1433 Only
Action 3.6.3.2.A Bases	Drywell Cooling System Fans	NUREG(s)- 1433 Only
Action 3.6.3.4.A	CAD System	NUREG(s)- 1433 Only
Action 3.6.3.4.A Bases	CAD System	NUREG(s)- 1433 Only
Action 3.7.3.A	DG [1B] SSW System	NUREG(s)- 1433 Only
Action 3.7.3.A Bases	DG [1B] SSW System	NUREG(s)- 1433 Only
Action 3.3.3.1	PAM Instrumentation	NUREG(s)- 1434 Only
Action 3.3.3.1 Bases	PAM Instrumentation	NUREG(s)- 1434 Only
Action 3.3.3.2	Remote Shutdown System	NUREG(s)- 1434 Only
Action 3.3.3.2 Bases	Remote Shutdown System	NUREG(s)- 1434 Only
Action 3.4.7.A	RCS Leakage Detection Instrumentation	NUREG(s)- 1434 Only
Action 3.4.7.A Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1434 Only
Action 3.4.7.B	RCS Leakage Detection Instrumentation	NUREG(s)- 1434 Only
Action 3.4.7.B Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1434 Only
Action 3.4.7.D	RCS Leakage Detection Instrumentation	NUREG(s)- 1434 Only
Action 3.4.7.D Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1434 Only
Action 3.4.8.A	RCS Specific Activity	NUREG(s)- 1434 Only
Action 3.4.8.A Bases	RCS Specific Activity	NUREG(s)- 1434 Only
Action 3.4.9	RHR and Shutdown Cooling System - Hot Shutdown	NUREG(s)- 1434 Only
Action 3.4.9 Bases	RHR and Shutdown Cooling System - Hot Shutdown	NUREG(s)- 1434 Only
Action 3.6.3.1.A	Primary Containment Hydrogen Recombiners	NUREG(s)- 1434 Only
Action 3.6.3.1.A Bases	Primary Containment Hydrogen Recombiners	NUREG(s)- 1434 Only
Action 3.6.3.2.A	Primary Containment and Drywell Hydrogen Igniters	NUREG(s)- 1434 Only

10/12/2001

DRAFT FOR NRC COMMENT

(CEOG-141, Rev. 3)

TSTF-359, Rev. 6

Action 3.6.3.2.A Bases	Primary Containment and Drywell Hydrogen Igniters	NUREG(s)- 1434 Only
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Action 3.6.3.3.A	Drywell Purge System	NUREG(s)- 1434 Only
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Action 3.6.3.3.A Bases	Drywell Purge System	NUREG(s)- 1434 Only
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10/12/2001

JUSTIFICATION

Background

LCO 3.0.4 states, "When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time." The allowance to enter MODES or specified conditions in the Applicability while relying on ACTIONS is given because ACTIONS which permit continued operation of the unit for an unlimited period provide an acceptable level of safety for continued operation. This is without regard to the status of the unit before or after the MODE change.

The allowances of LCO 3.0.4 are based on NRC Generic Letter 87-09 which states with respect to unnecessary 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."

In the development of ITS, many improvements were made to LCO 3.0.4 including clarification of its applicability regarding normal shutdown and Required Action shutdowns, and MODE changes during Cold Shutdown and Refueling Operations. During ITS development, almost all the LCOs with ~~Allowed Outage Times (AOTs) Completion Times~~ greater than or equal to 30 days, and many of the LCOs with ~~AOTs Completion Times~~ greater than or equal to 7 days, were given individual LCO 3.0.4 exceptions. During many plant specific ITS conversions, individual plants provided justifications for other LCO 3.0.4 exceptions. These specific exceptions allow entry into a MODE or specified condition in the Applicability while relying on these ACTIONS.

Need for Change

ITS LCO 3.0.4 and SR 3.0.4 are still overly restrictive. The startup of a unit is frequently delayed due to the current restrictions of LCO 3.0.4. For example, a single maintenance activity that is almost complete can cause significant delays and changes in the previously well thought out plans for returning the unit to service. ~~Allowing the unit to enter the MODE or other specified condition in the Applicability of applicability for that specification~~ a Specification for such situations would allow the work to be completed without creating the potential for error likely situations due to artificially shorter periods of time to complete all appropriate Surveillances and maintenance activities and avoid changes in other activities.

Proposed Change

The proposed change revises LCO 3.0.4 and SR 3.0.4. LCO 3.0.4 is revised to state, "When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:" and SR 3.0.4 is revised to state, "When an LCO is not met due to Surveillances not having been met, entry into a MODE or

other specified condition in the Applicability shall only be made.” Both LCO 3.0.4 and SR 3.0.4 then continue, “(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 or time, of, (b.) After performance of a risk evaluation, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability change, and establishment of risk management actions, if appropriate.”

The current LCO 3.0.4.a allowance is retained without the need for risk evaluation because the Required Actions which allow indefinite operation already satisfy the safety function.

The paragraph in LCO 3.0.4 which describes exceptions is deleted. Individual LCO 3.0.4 exceptions would be deleted throughout the ITS and replaced with use of the risk evaluation provision being added to LCO 3.0.4 and SR 3.0.4.

The LCO 3.0.4 allowance typically only applies to systems and components. The values and parameters of the Technical Specifications that have their own respective LCOs (e.g., Containment Air Temperature, Containment Pressure, MCPR, Moderator Temperature Coefficient, etc.) are typically not addressed by LCO 3.0.4.

The Bases of LCO 3.0.4 are revised to explain the use of the new LCO 3.0.4 exception allowance: The Bases of SR 3.0.4 are also revised to reflect the changes made to the Specifications.

While these Bases changes are being proposed as part of the generic justification of this proposed change, the Bases for each plant will be revised to be plant specific.

Justification

The proposal to allow entry into a MODE or other specified condition in the Applicability while relying on ACTIONS based on a risk evaluation 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 evaluate the risk associated with various plant configurations. This change is a logical step of requiring licensees to evaluate the application of LCO 3.0.4 exception allowances in light of the newly available tools and information.

The risk evaluation may consider a variety of factors, but will focus on maintaining acceptable plant risk. Consideration would be given to the probability of completing restoration such that the requirements of the LCO would be met prior to entering ACTIONS that would require exiting the Applicability. The evaluation 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 LCOs, MODES, or Applicability can be entered while relying on the ACTIONS as do the current LCO 3.0.4 exceptions, but would add the requirement to evaluate the risks prior to making the MODE change. This evaluation is not currently required. In addition, the ITS Completion Times provide a limit to

how long a licensee could be in a MODE or specified condition of the Applicability without meeting the LCO requirements.

When an LCO is not met, the licensee must restore compliance with the LCO consistent with the requirements of the Technical Specifications. This restoration may include corrective maintenance. The recent revisions to 10CFR50.65 require 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. The final rule clarifies that these requirements apply under all conditions of operation, including shutdown, and that the assessments are to be used so that the increase in risk that may result from the maintenance activity will be managed to ensure that the plant is not inadvertently placed in a condition of significant risk. So effectively, there is be a regulatory requirement to evaluate the risks prior to making the MODE change. NRC Regulatory Guide 1.182 endorses the guidance of NUMARC 93-01, Section 11, as revised in February 2000, as an acceptable approach to meet 10 CFR 50.65(a)(4).

Section 11.3.1 of NUMARC 93-01 addresses assessment process, control, and responsibilities, as follows:

The process for conducting the assessment and using the result of the assessment in plant decisionmaking should be proceduralized. The procedures should denote responsibilities for conduct and use of the assessment, and should specify the plant functional organizations and personnel involved, including, as appropriate, operations, engineering, and risk assessment (PSA) personnel. The procedures should denote responsibilities and process for conducting the assessment for cases when the plant configuration is not covered by the normal assessment tool.

Plants choosing to adopt LCO 3.0.4.b should ensure that plant procedures in place to implement 10 CFR 50.65(a)(4) address the situation where entering a MODE or other specified condition in the Applicability is contemplated with plant equipment not OPERABLE. Section 11.3.8 of NUMARC 93-01 discusses the need to treat plant MODE changes as an emergent condition that may affect a previously performed risk assessment, and would require re-performance of the assessment. Adoption of LCO 3.0.4.b would result in this consideration applying to assessments for planned activities, as well as emergent conditions.

1. The procedures should state that the risk assessment (and risk management actions) will consider the impact of being in a higher plant MODE, for the expected duration, considering the plant equipment configuration at the time of the MODE change.
2. The guidance of NUMARC 93-01, Section 11, and Appendix E (addressing PSA quality) should be followed in assessing and managing the risk resulting from the MODE change.
3. Since the MODE change necessitating the use of LCO 3.0.4.b would involve a transition upward in MODE, towards power operation, the "power operations" guidance of NUMARC 93-01, Sections 11.3.3 (scope) and 11.3.4 (assessment) should be followed for situations where LCO 3.0.4.b is entered.
4. The assessment should include consideration that there is a reasonable probability of completing

restoration such that the requirements of the LCO would be met prior to the expiration of the ACTIONS Completion Times that would require exiting the Applicability.

LCO 3.0.4.b should not be used unless there is a high likelihood that the system or component LCO will be satisfied following the MODE change. The revised plant oversight process treats unplanned power changes as a factor that could lead to a finding under the significance determination process. Thus, the oversight process would provide a significant disincentive to entering the MODE of Applicability of an LCO, and moving up in power, when there was some likelihood that the MODE of applicability would have to be subsequently exited due to failure to restore the unavailable system or component to service within the Completion Time.

This proposed change would provide standardization and consistency to the use and application of LCO 3.0.4. Currently there are numerous variations of LCO 3.0.4 requirements in the Technical Specifications of individual plants. Additionally, the ITS NUREGs are not totally consistent in their treatment of LCO 3.0.4. This proposed change will further ensure consistency in appropriate levels of risk assessment for plant configuration.

In addition, as the unit goes up in MODE the complement of systems available to mitigate certain events is increased (e.g., for PWRs - availability of SGs for cooling, in addition to shutdown cooling, for BWRs - availability of HPCI and RCIC). In most cases, increasing in MODE from shutdown cooling results in a reduction of risk due to termination of shutdown cooling and the additional mitigation capability provided by steam driven systems at higher MODES. This is due to the added level of protection to prevent core damage on a loss of cooling, and the added ability to respond to a station blackout using steam driven systems. Thus in most cases, risk can be reduced by allowing entry into a MODE or other specified condition in the Applicability. ~~For cases beyond the generic evaluation, a risk evaluation is required.~~ For those cases where the risk of the MODE change may be greater (i.e., the systems listed on the Table), the risk assessment and associated risk management actions, if any, must be documented and retained. This ~~action~~ will ensure that no MODE changes allowed by this change will result in an unacceptable risk increase. Overall, since most MODE changes allowed by this TSTF result in a risk decrease from one MODE to the next, and a risk evaluation is required for any potential MODE change ~~resulting in a risk increase~~ when an equipment LCO is not met, this change is considered risk neutral.

Most plants have some pre-existing exceptions to the applicability of LCO 3.0.4 for certain systems or components. These pre-existing exceptions would be removed by the proposed change, and replaced with the risk-informed approach to LCO 3.0.4.b as described above. Pre-existing plant-specific exceptions to parameter or value LCOs are not affected by this change and may be retained.

This change in LCO 3.0.4 philosophy ~~would require~~ requires a change in SR 3.0.4. If a Surveillance Requirement is not met prior to entering the MODE or specified condition in the Applicability, the LCO would be declared not met and LCO 3.0.4 would apply.

Effect on Safety Analyses

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.

Effect on Risk Informed Analysis

A quantitative, qualitative, or blended risk evaluation ~~should~~ must be performed to assess the risk impact of the MODE change, based on the specific plant configuration at that time, and the risk impacts must be managed in accordance with the assessment results. From generic evaluations, systems/components can be identified which are equally or more important to risk in MODE 1 than in the transition MODES. The Technical Specifications allow continued operation with this equipment unavailable during MODE 1 operation for the duration the Completion Time. Since this is allowable, and since the risk impact bounds the risk of transitioning up in MODE and entering the Conditions and Required Actions, the use of the LCO 3.0.4 allowance for these systems should be generally acceptable, as long as the risk is assessed and managed as stated above. However, This quantitative, qualitative, or blended risk evaluation should take into account the impact on initiating event frequency and mitigation capability as a function of plant MODE. From such evaluations, systems/components can be identified whose unavailability results in an equal or greater risk impact in MODES 2-5 for PWRs and MODES 2-4 for BWRs than in MODE 1. For these systems/components, it would be generally acceptable to utilize the LCO 3.0.4 exceptions. There is a small subset of systems that have been generically determined to be risk significant more important to risk and do not typically have the LCO 3.0.4 exception allowance allowed. The Bases of each ITS NUREG contain this generic Owners Group list.

The applicability of the LCO should be reviewed with respect to the actual plant configuration at that time. Entry into more than one LCO 3.0.4.b ~~exception allowance~~ at the same time would be evaluated under the auspices of 10 CFR 50.65(-a-)(4) and consideration of risk management actions discussed in Regulatory Guide 1.182. To apply the LCO 3.0.4.b ~~exception allowance~~ to plant systems/components identified in the Bases as potentially higher risk than for MODE 1 operation, a plant specific justification would be required.

Owners Groups Qualitative Risk Assessment

Each of the Owners Groups has developed a Qualitative Risk Assessment to justify the relaxation and increased flexibility of the MODE restrictions. These reports are generic to the respective Owners Groups. Individual plants may perform plant specific evaluations and assessments along with their respective Owners Groups reports and this TSTF-359 to justify additional flexibility beyond the generic flexibility provided by this TSTF. These Owners Groups assessments are Attachments 1 – 4 of this TSTF-359.

Determination of No Significant Hazards Considerations

A change is proposed to the Improved Technical Specifications NUREGs 1430 – 1434, LCO 3.0.4 to allow entry into a MODE or other specified condition in the Applicability while relying on ACTIONS after performance of a risk evaluation. LCO 3.0.4 exceptions in individual Specifications would be eliminated. SR 3.0.4 is revised to reflect the LCO 3.0.4 allowance.

In accordance with the criteria set forth in 10 CFR 50.92, the Industry has evaluated these proposed Improved Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

The proposed change allows entry into a MODE while relying on ACTIONS. Being in an ACTION is not an initiator of any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. The consequences of an accident while relying on ACTIONS as allowed by the proposed LCO 3.0.4 are no different than the consequences of an accident while relying on ACTIONS for other reasons, such as equipment inoperability. Therefore, the consequences of an accident previously evaluated are not significantly increased by this change. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change allows entry into a MODE while relying on ACTIONS. The Technical Specifications allow operation of the plant without a full complement of equipment. The risk associated with this allowance is managed by the imposition of ACTIONS and Completion Times. The net effect of ACTIONS and Completion Times on the margin of safety is not considered significant. The proposed change does not change the ACTIONS or Completion Times of the Technical Specifications. The proposed change allows the ACTIONS and Completion Times to be used in new circumstances. However, this use is predicated on an evaluation which focuses on ~~minimizing~~ managing plant risk. In addition, current allowances to utilize the ACTIONS and Completion Times which do not require risk evaluation to ~~minimize risk~~ are eliminated. As a result, the net change to the margin of safety is insignificant. Therefore, this change does not involve a significant reduction in a margin of safety.

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ATTACHMENTS

The Attachments 1 – 4, Owners Groups Qualitative Risk Assessments, have been removed in this Revision 6, Draft for Review, of TSTF-359. Attachments 1 – 4 have been replaced with only the revised versions of the Tables of more important or limited systems for LCO 3.0.4 flexibility which appeared in TSTF-359, Revision 5 Attachments 1 – 4.

These tables have been modified to provide consistency and standardization across the Owners Groups. In addition, it has been clarified that support systems will be considered under the definition of OPERABILITY, the provisions of LCO 3.0.6, and the Safety Function Determination Program (SFPD) and, as such, these support systems are not listed separately in the Tables. Support system requirements will be addressed through existing Technical Specifications requirements.

The Owners Groups Qualitative Risk Assessments will be formally modified and included in the final version of TSTF-359, Revision 6, after the concepts are agreed to by the Industry and the NRC.

DRAFT FOR NRC COMMENT

**ATTACHMENT 1
BWR**

**Technical Justification to Support Risk-Informed Improvements
to Technical Specification
Mode Restraints for BWR Plants**

DRAFT FOR NRC COMMENT

Table 1

List of Risk-Significant BWR Systems/Components* During Full Power (MODE 1)

- High Pressure Coolant Injection (HPCI) System – BWR 3 and 4 Plants
- High Pressure Core Spray (HPCS) – BWR 5 and 6 Plants
- Reactor Core Isolation Cooling (RCIC) System – BWR 3, 4, and 5 and 6 Plants
- Isolation Condenser – BWR 2 Plants
- Diesel Generators (including other Emergency / Shutdown AC Power Supplies)
- Hardened Wetwell Vent System – BWR 2, 3, and 4 plants with Mark I Containment

Table 2

List of Risk-Significant BWR Systems/Components* During Low Power (MODE 2)

- High Pressure Coolant Injection (HPCI) System – BWR 3 and 4 Plants
- High Pressure Core Spray (HPCS) – BWR 5 and 6 Plants
- Reactor Core Isolation Cooling (RCIC) System – BWR 3, 4, and 5 and 6 Plants
- Isolation Condenser – BWR 2 Plants
- Diesel Generators (including other Emergency / Shutdown AC Power Supplies)
- Hardened Wetwell Vent System – BWR 2, 3, and 4 plants with Mark I Containment

Table 3

List of Risk-Significant BWR Systems/Components* During Shutdown (MODE 3)

- Diesel Generators (including other Emergency / Shutdown AC Power Supplies)
- Hardened Wetwell Vent System – BWR 2, 3, and 4 plants with Mark I Containment

Table 4

List of Risk-Significant BWR Systems/Components* During Shutdown (MODE 4)

- Diesel Generators (including other Emergency / Shutdown AC Power Supplies)
- Residual Heat Removal System

* Including systems supporting the OPERABILITY of the listed systems.

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ATTACHMENT 2
B&W Owners Group
Qualitative Risk Assessment for Increased Flexibility
in
MODE Restraints

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B&WOG Qualitative Risk Assessment for Increased Flexibility in MODE Restraints

To Enter Plant Operating Mode	Systems More Important¹
5	DHR EDG [hydro-electric units for Oconee]
4	DHR EDG [hydro-electric units for Oconee]
3	EDG [hydro-electric units for Oconee]
2	EDG [hydro-electric units for Oconee]
1	EFW ² EDG [hydro-electric units for Oconee]

Notes:

1. Includes systems supporting the operation of the systems listed in this column.
2. In Modes 5, 4, 3 and 2, EFW is not as important because of the availability of other multiple separate systems to supply feedwater to the SGs. Other systems include multiple condensate and main feedwater systems (some plants also have additional SG feed systems available).

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ATTACHMENT 3
CEOG
Qualitative Risk Assessment for Relaxation
of
MODE Entry Restraints

Table 4*,**					
Candidate Systems and Components Exempted from 3.0.4 Relaxation					
System/Component	ENTERING MODE				
	1	2 (Startup)	3 (Hot Standby)	4 (Hot Shutdown)	5 (Cold Shutdown)
SDC	Component Not Required	Component Not Required	Component Not Required	Component Not Required	Relaxation Not Allowed
LTOP/ PORVs (when used for LTOP)	Component Not Required	Component Not Required	Component Not Required	Component Not Required above Set Temperature otherwise relaxation not allowed	Relaxation Not Allowed
EDG	Relaxation Not Allowed	Relaxation Not Allowed	Relaxation Not Allowed	Relaxation Not Allowed	Relaxation Not Allowed
HPSI	Relaxation Allowed	Relaxation Allowed	Relaxation allowed above [1700 PSIA] only Otherwise Relaxation Not allowed	Relaxation Not Allowed	Component Not Required
AFW/EFW ***	Relaxation Not Allowed	Relaxation Not Allowed	Relaxation Not Allowed	Relaxation Not Allowed	Component Not Required

*Support systems required for operability.

** Restricted relaxation may be allowed based on results of PSA risk assessment

*** If AFW not used for heat removal relaxation is allowed

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ADDITIONAL INFORMATION (Do not include in table)

CE units use LPSI pumps for SDC. Availability of LPSI is important to the robustness of the SDC system.

HPSI is required in mode 4 as the only inventory makeup capability for a flow diversion event. HPSI is also required in mode 3 < 1700 psia LCO relaxation would result in total HPSI system unavailability since the LCO does not require 2 HPSIs for Operability.. Hence no relaxation recommended.

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ATTACHMENT 4
WOG
Qualitative Risk Assessment Supporting Increased Flexibility
in
MODE Restraints

Table 4	
Summary of Mode Change Limitations	
To Enter Plant Operating Mode	Limitations to Enter Plant Operating Mode
5	<ul style="list-style-type: none"> • Two trains of RHR available, one train of RHR in service • Cold overpressure protection system in service • EDGs available • The systems supporting the operation of the above systems
4	<ul style="list-style-type: none"> • AFW system available (consistent with the plant specific Technical Specifications and only if dependent on AFW for startup) • High head safety injection available • Cold overpressure protection system in service • EDGs available • The systems supporting the operation of the above systems
3	<ul style="list-style-type: none"> • AFW system available (only if dependent on AFW for startup) • EDGs available • The systems supporting the operation of the above systems
2	<ul style="list-style-type: none"> • AFW system available (only if dependent on AFW for startup) • EDGs available • The systems supporting the operation of the above systems
1	<ul style="list-style-type: none"> • AFW system available • EDGs available • The systems supporting the operation of the above systems

LCO / BASES INSERTS

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Insert 1 (LCO 3.0.4) (All Owners Groups)

- a. When the associated ACTIONS to be entered permit continued operation in the MODE or other ~~specific~~specified condition in the Applicability for an unlimited period of time, or,
- b. After performance of a risk evaluation, consideration of the results, determination of the acceptability of entering the MODE ~~change~~ or other specified condition in the Applicability, and establishment of risk management actions, if appropriate.

Insert 2 (LCO-SR 3.0.4) (All Owners Groups)

When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specific condition in the Applicability shall only be made:

- a. When the associated ACTIONS to be entered permit continued operation in the MODE or other ~~specific~~specified condition in the Applicability for an unlimited period of time, or,
- b. After performance of a risk evaluation, consideration of the results, determination of the acceptability of entering the MODE ~~change~~ or other specified condition in the Applicability, and establishment of risk management actions, if appropriate.

Insert 3 (LCO 3.0.4 Bases)

When an LCO is not met, LCO 3.0.4 also allows ~~changes in entering~~ MODES or other specified conditions in the Applicability ~~after a risk evaluation following assessment of the risk impact and determination that the impact can be managed.~~ The risk evaluation may use quantitative, qualitative, or blended approaches, and ~~should be consistent with the approach of the risk evaluation 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 evaluations 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.”

The results of the risk evaluation shall be considered in determining the acceptability of entering the MODE change or other specified condition in the Applicability, and any corresponding risk management actions. Consideration will 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.

~~A pre-risk assessment and establishment of risk management actions, as appropriate, are or configuration specific risk analysis is required for determination of acceptable risk for changes in entering~~ MODES or other specified conditions in the Applicability when an LCO is not met. The elements of the risk assessment and risk management actions are included in Regulatory Guide 1.182 which addresses general guidance for conduct of the risk evaluation, 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 unacceptable. If the risk of changing MODES is determined to be greater than the acceptable risk, the configuration specific risk evaluation may be used to determine the risk impact, and the need for risk management actions as appropriate, which may include changing MODES.

A quantitative, qualitative, or blended risk evaluation ~~should~~ must be performed to assess the risk impact of entering the MODE change or other specified condition in the Applicability, based on the specific plant configuration at that time and the risk impacts must be managed in accordance with the assessment results.

~~— This quantitative, qualitative, or blended risk evaluation should take into account the impact on initiating event frequency and mitigation capability as a function of plant MODE. From such evaluations, systems/components can be identified whose unavailability results in an equal or greater risk impact in [MODES 2-5 (for PWRs) / MODES 2-4 (for BWRs)] than in MODE 1. For these systems/components, it would be generally acceptable to utilize the LCO 3.0.4 exceptions. From generic evaluations, systems/components can be identified which are equally or more important to risk in MODE 1 than in the transition MODES. The Technical Specifications allow continued operation with this equipment unavailable during MODE 1 operation for the duration of the Completion Time. Since this is allowable, and since the risk impact bounds the risk of transitioning up in MODE and~~

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entering the Conditions and Required Actions, the use of the LCO 3.0.4 allowance for these systems should be generally acceptable, as long as the risk is assessed and managed as stated above. However, there is a small subset of systems that have been generically determined to be more important to risk in [MODES 2 – 5 (for PWRs) / MODES 2 – 4 (for BWRs)] and do not typically ~~have~~ meet the LCO 3.0.4 ~~exception~~ allowance allowed. The Bases of each ITS NUREG contain ~~t~~ This respective generic Owners Group list is provided below.

The applicability ~~Applicability~~ of the LCO should be reviewed with respect to the actual plant configuration at that time. Each individual application of LCO 3.0.4.b, whether due to one or more than one LCO 3.0.4.b allowance at the same time, is required to be ~~Entry into more than one LCO 3.0.4.b exception at the same time would be~~ evaluated under the auspices of 10 CFR 50.65(a)(4) and consideration of risk management actions discussed in Regulatory Guide 1.182. To ~~apply~~ utilize the LCO 3.0.4.b ~~exception~~ allowance to plant systems/components identified in the Bases list below as potentially higher risk than for MODE 1 operation, a ~~plant~~ documented specific justification would be required.

The LCO 3.0.4 ~~exception~~ allowance typically only applies to systems and components. The values and parameters of the Technical Specifications that have their own respective LCOs (e.g., Containment Air Temperature, Containment Pressure, MCPR, Moderator Temperature Coefficient, etc.) are typically not addressed by this LCO 3.0.4.b allowance. ~~and the list of the value and parameter exclusions are found in licensee controlled documents.~~

~~Previous flexibility beyond the generic LCO 3.0.4 some plants may have had approved for LCO 3.0.4 exceptions and application may be justified using plant specific justification to be retained along with the generic LCO 3.0.4.~~

In order to support the conduct of the appropriate assessments, each Owners Group has performed an evaluation to identify plant systems or components which are more important to risk in the transition MODES than in MODE 1. These systems are listed in the following table.

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[System Table for BWR/4]

<u>System*</u>	<u>MODE or Other Specified Condition in the Applicability</u>
High Pressure Coolant Injection (HPCI) System (BWR 3 and 4 plants)	1, 2
Reactor Core Isolation Cooling (RCIC) System (BWR 3 and 4 plants)	1, 2
Isolation Condenser (BWR 2 plants)	1, 2
<u>Diesel Generators, including Emergency / Shutdown AC Power Supplies</u>	1, 2, 3, 4
Hardened Wetwell Vent System	1, 2, 3, 4
Residual Heat Removal System	4

* Including systems supporting the OPERABILITY of the listed systems.

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[System Table for BWR/6]

<u>System*</u>	<u>MODE or Other Specified Condition in the Applicability</u>
High Pressure Core Spray (HPCS) (BWR 5 and 6 plants)	1, 2
Reactor Core Isolation Cooling (RCIC) System (BWR 5 and 6 plants)	1, 2
<u>Diesel Generators, including Emergency / Shutdown AC Power Supplies</u>	1, 2, 3, 4
Hardened Wetwell Vent System	1, 2, 3, 4
Residual Heat Removal System	4

* Including systems supporting the OPERABILITY of the listed systems.

[System Table for BWOGL]

<u>System*</u>	<u>MODE or Other Specified Condition in the Applicability</u>
EDG (Hydro-electric units for Oconee)	<u>1, 2, 3, 4, 5</u>
<u>LPIDHR</u>	4, 5
EFW	<u>1, 2, 3, 4</u>

* Including systems supporting the OPERABILITY of the listed systems.

DRAFT FOR NRC COMMENT

TSTF-359, Rev. 6 – Draft for NRC Comment

[System Table for CEOG]

<u>System*</u>	<u>MODE or Other Specified Condition in the Applicability</u>
AFW and AC / DC Power Supporting AFWHPSI	2, 3, 3**, 4
Emergency Diesels supporting AFWLTOP / PORVs (when used for LTOP)	4, 5
Emergency Diesels <u>Generators</u>	<u>3, 1, 2, 3, 4, 5</u>
Turbine Driven AFW Pump <u>AFW / EFW</u>	3, 1, 2, 3, 4
<u>SDC</u>	<u>5</u>

* Including systems supporting the OPERABILITY of the listed systems.

** Below 1700 psia.

[System Table for WOG]

<u>System*</u>	<u>MODE or Other Specified Condition in the Applicability</u>
RCS Loops (RHR)	5
LTOP System	4, 5, 6
ECCS Shutdown (ECCS High Head Subsystem)	4
AFW System	1, 2**, 3**, 4**
AC Sources (Diesel Generators)	1, 2, 3, 4, 5, 6

* Including systems supporting the OPERABILITY of the listed systems.

** If dependant upon AFW for startup.

[The following is applicable to all NUREGs]

NUMARC 93-01, “Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” states that the rigor of the risk analysis should be commensurate with the risk impact of the proposed configuration. For unavailable plant systems or components listed on the above table, a plant MODE change has been determined, through generic evaluation, to result in a potential risk increase. The rigor of the risk analysis performed to support use of LCO 3.0.4.b should reflect this result, and risk management actions should be employed accordingly. Further, when plant systems or components in the above table are unavailable (or otherwise inoperable), use of LCO 3.0.4.b requires documentation of the risk assessment and associated risk management actions.

For unavailable plant systems or components not appearing in the above table, proposed plant MODE changes will generally not involve a risk increase greater than the system or component being unavailable in MODE 1. The risk assessment performed to support use of LCO 3.0.4.b for systems or components not appearing on the above table must meet all considerations of NUMARC 93-01, but need not be documented.

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

Insert 4 (SR 3.0.4 Bases) (All Owners Groups)

A provision is included to allow entry into a MODE or other specified condition in the Applicability:

- a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specific condition in the Applicability for an unlimited period of time, {or,
- b. After performance of a risk evaluation, consideration of the results, determination of the acceptability of the MODE change, and establishment of risk management actions, if appropriate.}

Preliminary Description Paper

Risk-Informed Technical Specifications Initiative 4B

The purpose of this paper is to describe the general considerations in establishing a risk informed process to supplement the existing technical specification allowed outage times for systems/equipment with a configuration risk management approach.

Configuration risk management

One fundamental purpose of tech specs is to provide plant configuration control. Plants are designed with multiple redundant systems, and supporting systems to accomplish safety functions in accordance with the plant design basis and accident analysis as contained in the FSAR. Tech specs place limits on the times that systems, or supporting systems can be out of service, and establish actions that must be taken (often leading to plant shutdown) in the event these time limits are not met. Tech specs are not risk-informed, in that the allowed outage times do not typically have a risk basis, each out of service condition is considered independently, and few limits are imposed on the number of times an out of service condition can be entered.

The requirements of the maintenance rule impose additional constraints on equipment out of service times (unavailability). These requirements are more risk-informed, in that they address unavailability of a train or piece of equipment over a period of time. Plant maintenance generally involves temporary impacts on equipment availability that are balanced by increased reliability. The maintenance rule requires availability of risk-significant equipment to be balanced with reliability, through the use of PSA insights. This has the effect of establishing availability targets for important equipment in accordance with those values assumed in the PSA.

In November 2000, a risk-informed plant configuration control provision was added to the maintenance rule, 10 CFR 50.65, requiring assessment and consideration of risk prior to performance of both online and shutdown maintenance. Industry developed guidance to accompany this rulemaking through a revision to the maintenance rule implementation guideline. That document, NUMARC 93-01, revision 3, provides guidance on the use of quantitative probabilistic safety assessment (PSA), qualitative risk assessment, and plant operating experience to assess plant risk due to maintenance activities. It also provides guidance on actions that may be taken to manage the risk as determined by the assessment. The guidance also incorporates the shutdown risk management approach of NUMARC 91-06, which is based on preservation of key shutdown safety functions.

It is recognized that the configuration control requirements of technical specifications (deterministic) and the maintenance rule (risk informed) may be in conflict; however, the licensee is required to comply with both, resulting in limitations on configuration control flexibility that are unrelated to plant safety. The intent of this initiative is to address the incompatibilities between these methods, and provide a single, consistent approach for plant configuration control.

The scope of this initiative is limited to those action requirements and limiting conditions for operation that address configuration and operability of plant equipment, and are thus amenable to a risk assessment process. Existing technical specification actions and limiting conditions relative to plant parameters, such as fuel limits, pressure limits, or power-flow distribution maps, would not be affected. Further, this initiative applies to systems, components, and equipment that are explicitly addressed by technical specifications. Initiative 7 addresses the treatment of design features that are implicitly captured into technical specifications through the definition of OPERABILITY.

The intent of this initiative is to address situations where the train or system is unavailable, or the equipment's primary safety function is degraded (e.g. a HPSI injection valve is out of service, but the other active components of the system are available). Initiative 7 is intended to address situations where design features required for low probability initiating events are degraded, but the system's primary safety function is maintained. This would allow deferral of entrance into the Limiting Condition for Operation (LCO) for a specific time frame.

General guidelines of approach:

1. The existing AOTs and action requirements of tech specs would be retained.
2. An option will be added to use a configuration risk management approach to extend the AOT and undertake risk management actions as appropriate.
3. The risk assessment and management approach would be in accord with the guidelines of NUMARC 93-01, with additions as detailed below.
4. A backstop AOT will be developed, which cannot be exceeded regardless of the results of the risk analysis.

Explanation

Attachment 1 provides a draft tech spec page illustrating the format of the approach.

A planned maintenance condition may result in equipment either being removed from service, or rendered inoperable due to a degradation of the equipment's

function such that it no longer meets the tech spec operability definition. This results in entrance into the limiting condition for operation.

Following the determination of inoperability, the tech spec ACTIONS must be entered, and a risk assessment must be performed in accordance with the maintenance rule (a)(4) guidance. Risk management actions are also established in accordance with the (a)(4) guidance. These actions could include the need to perform a mode change prior to expiration of the Tech Spec AOT. The above combination of actions, which is the same as is currently in use, provides appropriate control of plant configuration risk up until the expiration of the AOT. The configuration risk management approach would optionally be entered upon expiration of the existing AOT (frontstop).

Under the proposed approach, the licensee may make the decision to utilize the configuration risk management option to extend the AOT. This entails performance of an enhanced risk assessment in accordance with the description below. The risk assessment and determination of risk management actions must be completed prior to expiration of the existing AOT (frontstop). The risk management actions must be established prior to expiration of the frontstop.

A backstop AOT limit is implemented for all tech spec systems/equipment within the scope of this initiative. In no case can the AOT exceed the backstop limit. This is further explained below.

In the event of an emergent condition (as described in NUMARC 93-01), the enhanced risk assessment and associated risk management actions must be re-evaluated in a timely manner. Revised risk management actions must be in place within a timely manner.

Flexible AOT risk assessment and management

The flexible AOT assessment would include all provisions of the existing (a)(4) implementation guidance, with the following additions:

1. The assessment would require, as a minimum, a quantitative assessment using a level one internal events PSA and simplified LERF model for power operation.
2. All elements of the level one PSA must meet the minimum attributes for a risk-informed application when evaluated by a peer review team in accordance with NEI 00-02, industry peer review guidance document, or "conditional" grades must be resolved.

3. The PSA should be evaluated for update (model update and data update) on a minimum interval of two refueling cycles. Modifications to the plant resulting in non-minimal risk effects (changes to baseline risk, or changes to distribution of significant equipment or actions) must be reflected in the PSA, or otherwise accommodated in the risk assessment process, within X weeks.
4. The risk-informed decisionmaking process should have the capability to model the real time plant configuration, and calculate the configuration-specific CDF and LERF. That is, it should use the "zero maintenance" model, and be capable of timely requantification to address emergent conditions.
5. The assessment must consider instantaneous risk, integrated risk for a given configuration, and aggregate risk as discussed in NUMARC 93-01. The quantitative guidelines for each of these parameters are specified in NUMARC 93-01.
6. Explicit risk management actions (e.g., mode change, compensatory measure) based on the above quantitative guidelines, and other qualitative PSA and risk insights, may be developed and documented in advance for anticipated combinations of equipment with more significant risk impacts.
7. Regardless of the risk assessment outcome, planned maintenance activities must not be performed that would render both trains of a safety system inoperable at the same time. Emergent conditions may allow this situation for a limited time, based on the outcome of the assessment and management actions.
8. The assessment, results, and associated risk management actions must be documented and available for subsequent NRC audit or inspection.

Backstop AOT

A tech spec not-to-exceed value for each AOT subject to this initiative would be provided. This AOT would be referred to as the "backstop AOT", which could never be exceeded regardless of the risk evaluation results. For systems with very low risk impact, the backstop AOT provides for return to a configuration as described in the deterministic accident analysis, and obviates plant "modifications" involving very long allowed outage times.

The backstop is in place to address deterministic considerations. It is not necessary that the backstop AOT be derived from risk analyses. The risk assessment and management process required to utilize any portion or all of the backstop AOT is complete and self sufficient with regard to consideration of risk. Further, if a backstop value were to be derived from risk analyses (e.g., use of a Reg Guide 1.177

approach to calculate ICDP, etc) it would have to be based on specific assumptions with regard to the degree of degradation of the equipment. Typically a Reg Guide 1.177 evaluation assumes the equipment is out of service; however, for many anticipated conditions, the equipment could still be partially functional, and a backstop AOT calculated based on out of service equipment would preclude proper consideration of the actual equipment performance capability in the risk assessment and management process.

The backstop AOT would typically be 30 days. Individual exceptions may be identified.

ATTACHMENT 1

INITIATIVE 4B CONCEPT
GENERIC RISK INFORMED AOT'S WITH A BACKSTOP
EXAMPLE FORMAT

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One required [subsystem, component] inoperable.</p>	<p>A.1. Restore required inoperable [subsystem, component] to OPERABLE status,</p> <p><u>OR</u></p> <p>A.2.1. Determine that the configuration is acceptable for Completion Time extension beyond the [Front Stop AOT] but not to exceed 30 days,</p> <p><u>AND</u></p> <p>A.2.2. Determine that the configuration is acceptable for continued operation beyond the [Front Stop AOT],</p> <p><u>AND</u></p> <p>A.2.3. Restore required inoperable [subsystem, component] to OPERABLE status.</p>	<p>[Current Front Stop AOT (72 hours, 7 days)]</p> <p>[Current Front Stop AOT (72 hours, 7 days)]</p> <p>[Continuously]</p> <p>[Acceptable Completion Time Extension or Back Stop AOT, Whichever is Less]</p>
<p>B. Required Action and associated Completion Time not met.</p>	<p>B.1. [Be in MODE [3] or other appropriate compensatory action consistent with the level of degradation.]</p>	<p>[12 hours]</p>

DRAFT FORMAT