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## Industry/TSTF Standard Technical Specification Change Traveler

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**Increase Flexibility in MODE Restraints**

NUREGs Affected: ☒ 1430 ☒ 1431 ☒ 1432 ☒ 1433 ☒ 1434

Classification: 1) Technical Change

Recommended for CLIP?: Yes

Priority 1) High

Simple or Complex Change: Complex

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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 an unlimited period of Time. SR 3.0.4 is revised to reflect the concepts of the change to LCO 3.0.4.

See Attached.

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### Revision History

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

Revision Proposed by: RITSTF

Revision Description:

Original Issue

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#### Owners Group Review Information

Date Originated by OG: 30-Aug-99

Owners Group Comments

(No Comments)

Owners Group Resolution: Superceeded 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**

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**Owners Group Review Information**

Date Originated by OG: 06-Oct-99

Owners Group Comments  
(No Comments)Owners Group Resolution: Superceeded Date:

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**OG Revision 2****Revision Status: Closed**

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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.

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**Owners Group Review Information**

Date Originated by OG: 24-Nov-99

Owners Group Comments  
(No Comments)Owners Group Resolution: Superceeded Date:

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**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:

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**OG Revision 3****Revision Status: Closed**

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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.

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**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

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:    ☐ BWO    ☐ 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:    ☒ BWO    ☒ 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:

22-Feb-02

**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

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

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**TSTF Revision 3****Revision Status: Closed****TSTF Review Information**

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

OG Review Completed: ☐ BWO ☐ 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: ☐ BWO ☐ WOG ☐ CEOG ☐ BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Superseded 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 controlled documents."

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**TSTF Revision 5****Revision Status: Closed**

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

**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-359, Revision 6 - Final

This revision incorporates the eight NRC comments dated 12/17/01 on the TSTF-359, Revision 6 - Draft for NRC

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

Comment as they were discussed and resolved by the RITSTF and the NRC on 12/19/01. This changed the justification with clarifications or additional information and did not affect the TS or Bases.

This revision provides an LCO 3.0.4.c allowance to address the issue of retaining current NUREG and plant-specific value and parameter LCO 3.0.4 exceptions. This revision also clarifies that the LCO 3.0.4 allowance may not be applied to systems and components on the individual Owners Groups tables without prior NRC review and approval.

**TSTF Review Information**

TSTF Received Date: 29-Sep-01      Date Distributed for Review 30-Jan-02

OG Review Completed: ☐ BWO ☐ WOG ☐ CEOG ☐ BWROG

TSTF Comments:

(No Comments)

TSTF Resolution:      Date:

**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

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Action 3.3.3	PAM Instrumentation	NUREG(s)- 1431 Only
Action 3.3.3 Bases	PAM Instrumentation	NUREG(s)- 1431 Only
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

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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
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

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Action	3.3.12 Bases	Remote Shutdown System (Digital)	NUREG(s)- 1432 Only
Action	3.4.11	Pressurizer PORVs	NUREG(s)- 1432 Only
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

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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
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

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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 Ignitors	NUREG(s)- 1434 Only
Action	3.6.3.2.A Bases	Primary Containment and Drywell Hydrogen Ignitors	NUREG(s)- 1434 Only
Action	3.6.3.3.A	Drywell Purge System	NUREG(s)- 1434 Only
Action	3.6.3.3.A Bases	Drywell Purge System	NUREG(s)- 1434 Only

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## 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 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."

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 Completion Times greater than or equal to 30 days, and many of the LCOs with 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. 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.

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. The LCO 3.0.4 for all the ITS NUREGs is currently worded exactly the same. However, each ITS NUREG has different LCO 3.0.4 Not Applicable statements throughout due to (1) the carryover from the old STS NUREGs which had different individual LCO 3.0.4 Not Applicable statements and (2) the negotiated LCO 3.0.4 Not Applicable statements during the development of the ITS NUREG and the plant specific ITS for

plants of that Owners Group that were included in the ITS NUREG. This proposed change will provide consistency and standardization of addressing the requirements of LCO 3.0.4 internally to each ITS NUREG and between all the ITS NUREGs. Additionally, per GL 87-09, when using the LCO 3.0.4 Not Applicable allowance for changing MODES or other specified conditions in the Applicability with inoperable equipment while relying upon the provisions of the ACTIONS statements, plants were required to ensure an acceptable level of safety for the plant was maintained and to exercise good practice in determining when to use LCO 3.0.4 Not Applicable allowances. The application of these requirements was performed inconsistently throughout the Industry partially due to a lack of specific guidance. This proposed change will further ensure consistency in appropriate levels of risk assessment for plant configuration allowances for the application of LCO 3.0.4.

### **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 of time, or, (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, and establishment of risk management actions, if appropriate, or, (c) When a specific value or parameter allowance has been approved by the NRC."

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 on being added to LCO 3.0.4 and SR 3.0.4.

The LCO 3.0.4.b allowance typically only applies to systems and components. The values and parameters of the Technical Specifications (e.g., Containment Air Temperature, Containment Pressure, MCP, Moderator Temperature Coefficient, etc.) are typically not addressed by LCO 3.0.4.b. These values and parameters are addressed by the LCO 3.0.4.c allowance.

The LCO 3.0.4.c allowance is retained without the need for risk evaluation because the NRC has already approved these specific value and parameter allowances in the Standard Technical Specifications and plant specific Technical Specifications. A list of the LCO 3.0.4.c specific value and parameter allowances which have been approved by the NRC is provided in the Bases of each NUREG. Each plant will provide a list of the LCO 3.0.4.c specific value and parameter allowances which have been approved by the NRC in their Technical Specifications Bases.

The Bases of LCO 3.0.4 are revised to explain the use of the new LCO 3.0.4 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 allowances in light of the newly available tools and information.

The risk evaluation 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 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. 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, the guidance of NUMARC 93-01 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. The oversight process will also provide a significant disincentive to a MODE transition when the risk assessment indicates it is not appropriate.

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 those cases where the risk of the MODE change may be greater (i.e., the systems and



components listed on the generic Owners Group Table), prior NRC review and approval of a specific LCO 3.0.4 allowance for those systems and components is required.

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 or the specific value or parameter allowances of LCO 3.0.4.c as described above. LCO 3.0.4.c provides for pre-existing value or parameter allowances in the Standard Technical Specifications and plant specific Technical Specifications.

This change in LCO 3.0.4 philosophy 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 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, 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 have the LCO 3.0.4 allowance. The Bases of each ITS NUREG contain this generic Owners Group Table for the respective Owners Group.

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 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 allowance to plant systems/components identified in the Bases in the generic Owners Group Table as more important to risk in the MODE to be entered, prior NRC review and approval is 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). 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 managing plant risk. In addition, current allowances to utilize the ACTIONS and Completion Times which do not require risk evaluation 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.

## **ATTACHMENTS**

The Owners Groups Qualitative Risk Assessments are included in this final version of TSTF-359, Revision 6. Several of these Owners Groups Qualitative Risk Assessments were modified to support the Owners Groups Tables that were revised to provide consistency and standardization between the Tables. Other Owners Groups Qualitative Risk Assessments were determined to be adequate as initially written to support the revised Owners Groups Tables. Several of these Qualitative Risk Assessments are still going through formal Owners Group review, however significant changes are not expected. The Owners Group final approved versions of the Qualitative Risk Assessments will be provided to the NRC when they are each available.

**ATTACHMENT 1**  
**BWR**  
**Technical Justification To Support Risk Informed Improvements**  
**To Technical Specification**  
**Mode Restraints for BWR Plants**

**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 and 3 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 and 3 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.

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

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

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<b>Table 4</b> <b>Results of B&amp;WOG Systems "More"</b> <b>Important Assessment</b>	
<b>To Enter Plant Operating Mode</b>	<b>Systems More Important<sup>1</sup></b>
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 <sup>2</sup> 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).



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

<b>Table 4*,**</b> <b>Candidate Systems and Components Exempted from 3.0.4 Relaxation</b>					
<b>System/Component</b>	<b>ENTERING MODE</b>				
	<b>1</b>	<b>2 (Startup)</b>	<b>3 (Hot Standby)</b>	<b>4 (Hot Shutdown)</b>	<b>5 (Cold Shutdown)</b>
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

**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.

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

## **LCO / BASES INSERTS**

**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 specified condition in the Applicability for an unlimited period of time,
- 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, and establishment of risk management actions, if appropriate, or
- c. When a specific value or parameter allowance has been approved by the NRC.

**INSERT 2 (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 specified condition in the Applicability for an unlimited period of time,
- 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, and establishment of risk management actions, if appropriate, or
- c. When a specific value or parameter allowance has been approved by the NRC.

**INSERT 3 (LCO 3.0.4 BASES) (ALL OWNERS GROUPS)**

When an LCO is not met, LCO 3.0.4 also allows entering MODES or other specified conditions in the Applicability 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 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 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 risk assessment and establishment of risk management actions, as appropriate, are required for determination of acceptable risk for 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 acceptable.

A quantitative, qualitative, or blended risk evaluation must be performed to assess the risk impact of entering the MODE 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.

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 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/components 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 have the LCO 3.0.4 allowance. These system/components are listed in each of the generic Owners Groups Tables.

The Applicability 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 evaluated under the auspices of 10 CFR 50.65(a)(4) and consideration of risk management actions discussed in Regulatory Guide 1.182. For those cases where the risk of the MODE change may be greater (i.e., the systems and components listed on the generic Owners Group Table), prior NRC review and approval of a specific LCO 3.0.4 allowance is required.

The LCO 3.0.4.b allowance typically only applies to systems and components. The values and parameters of the Technical Specifications (e.g., Containment Air Temperature, Containment Pressure, MCPR, Moderator Temperature Coefficient, etc.) are typically not addressed by this LCO 3.0.4.b allowance. These values and parameters are addressed by the LCO 3.0.4.c allowance.

A list of the LCO 3.0.4.c specific value and parameter allowances approved by the NRC is provided below.

**[TABLE FOR BWO]**

[LCO 3.4.16, RCS Specific Activity ]

**[TABLE FOR WOG]**

[LCO 3.4.16, RCS Specific Activity ]



**[TABLE FOR CEOG]**

[LCO 3.4.16, RCS Specific Activity ]

**[TABLE FOR BWR/4]**

[LCO 3.4.7, RCS Specific Activity ]

**[TABLE FOR BWR/6]**

[LCO 3.4.8, RCS Specific Activity ]

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. To apply the LCO 3.0.4 allowance to these systems and components, prior NRC review and approval is required. These systems are listed in the following table.

**[SYSTEM TABLE FOR BWR/4]**

<u>System</u> <sup>*</sup>	<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 and 3 plants)	1, 2
Diesel Generators, including Emergency / Shutdown AC Power Supplies	1, 2, 3, 4
Hardened Wetwell Vent System	1, 2, 3
Residual Heat Removal System	4

\* Including systems supporting the OPERABILITY of the listed systems.

**[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
Diesel Generators, including Emergency / Shutdown AC Power Supplies	1, 2, 3, 4
Residual Heat Removal System	4

\* Including systems supporting the OPERABILITY of the listed systems.

**[SYSTEM TABLE FOR BWOG]**

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

\* Including systems supporting the OPERABILITY of the listed systems.

**[SYSTEM TABLE FOR CEOG]**

<u>System</u> *	<u>MODE or Other Specified Condition in the Applicability</u>
HPSI	3**, 4
LTOP / PORVs (when used for LTOP)	4, 5
Emergency Diesel Generators	1, 2, 3, 4, 5
AFW / EFW	1, 2, 3, 4
SDC	5

\* 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
ECCS Shutdown (ECCS High Head Subsystem)	4
AFW System	1, 2**, 3**, 4**
AC Sources (Diesel Generators)	1, 2, 3, 4, 5

\* Including systems supporting the OPERABILITY of the listed systems.

\*\* If dependant upon AFW for startup.

[The following text is applicable to all NUREGs and follows the respective tables]

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. Therefore, prior NRC review and approval is required to apply the LCO 3.0.4 allowance to these systems and components.

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,
- 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, or
- c. When a specific value or parameter allowance has been approved by the NRC.

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

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

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

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

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

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

Exceptions to this Specification are stated in the individual Specifications.

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

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

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LCO 3.0.4

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

Insert 1

(continued)

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3.0 LCO APPLICABILITY

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LCO 3.0.4  
(continued)

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. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.

SR 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.

Reviewer's Note: LCO 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, LCO 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4. The MODE change restrictions in LCO 3.0.4 were previously applicable in all MODES. Before this version of LCO 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

## 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 testing required to demonstrate OPERABILITY.

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(continued)



### 3.0 SR APPLICABILITY

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SR 3.0.3 declared not met, and the applicable Condition(s) must be entered.  
(continued)

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SR 3.0.4 Entry into a MODE or other <sup>(only)</sup> specified condition in the <sup>(when)</sup> Applicability of an LCO shall ~~not~~ be made ~~unless~~ the LCO's Surveillances have been met within their specified frequency. *Insert 2* This provision shall not prevent entry into 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.

SR 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.

Reviewer's Note: SR 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, SR 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4. The MODE change restrictions in SR 3.0.4 were previously applicable in all MODES. Before this version of SR 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

TSTF-359, Rev 1.0

### 3.3 INSTRUMENTATION

#### 3.3.17 Post Accident Monitoring (PAM) Instrumentation

LC0 3.3.17 The PAM instrumentation for each Function in Table 3.3.17-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

#### NOTES

1. ~~LC0 3.0.4 is not applicable.~~

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.8	Immediately
C. <del>-----NOTE-----</del> Not applicable to hydrogen monitor channels.  One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days

(continued)

TSTF359, Rev 6

### 3.3 INSTRUMENTATION

#### 3.3.18 Remote Shutdown System

LC0 3.3.18 The Remote Shutdown System Functions in Table 3.3.18-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

#### NOTES

1. ~~LC0 3.0.4 is not applicable.~~

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 4.	12 hours

#### 3.4.15 RCS Leakage Detection Instrumentation

- a. One containment sump monitor; and
- b. One containment atmosphere radioactivity monitor (gaseous or particulate).

## ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required containment sump monitor inoperable.	<div style="border: 1px solid black; border-radius: 15px; padding: 5px; text-align: center;"> <del>NOTE</del>  <del>LCO 3.0.4 is not applicable.</del> </div> <p>A.1 Perform SR 3.4.13.1.</p> <p><u>AND</u></p> <p>A.2 Restore required containment sump monitor to OPERABLE status.</p>	<p>Once per 24 hours</p> <p>30 days</p>
B. Required containment atmosphere radioactivity monitor inoperable.	<div style="border: 1px solid black; border-radius: 15px; padding: 5px; text-align: center;"> <del>NOTE</del>  <del>LCO 3.0.4 is not applicable.</del> </div> <p>B.1.1 Analyze grab samples of the containment atmosphere.</p> <p><u>OR</u></p>	<p>Once per 24 hours</p> <p>(continued)</p>

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### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.16 RCS Specific Activity

LCO 3.4.16 The specific activity of the reactor coolant shall be within limits.

APPLICABILITY: MODES 1 and 2,  
MODE 3 with RCS average temperature ( $T_{avg}$ )  $\geq 500^{\circ}\text{F}$ .

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 > 1.0 $\mu\text{Ci/gm}$ .	<div style="border: 1px solid black; border-radius: 15px; padding: 5px; text-align: center;"> <del>NOTE</del>  <del>LCO 3.0.4 is not applicable.</del> </div>	
	<p>A.1 Verify DOSE EQUIVALENT I-131 within the acceptable region of Figure 3.4.16-1.</p> <p><u>AND</u></p> <p>A.2 Restore DOSE EQUIVALENT I-131 to within limit.</p>	<p>Once per 4 hours</p> <p>48 hours</p>
<p>B. Required Action and associated Completion Time of Condition A not met.</p> <p><u>OR</u></p> <p>DOSE EQUIVALENT I-131 in unacceptable region of Figure 3.4.16-1.</p>	B.1 Be in MODE 3 with $T_{avg} < 500^{\circ}\text{F}$ .	6 hours

(continued)

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### 3.6 CONTAINMENT SYSTEMS

#### 3.6.8 Hydrogen Recombiners (if permanently installed)

LCO 3.6.8 Two hydrogen recombiners shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One hydrogen recombinder inoperable.	<p>A.1</p> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin: 10px auto; width: fit-content;"> <p><del>NOTE</del> LCO 3.6.4 is not applicable.</p> </div> <p>Restore hydrogen recombinder to OPERABLE status.</p>	30 days
B. Two hydrogen recombiners inoperable.	<p>B.1 Verify by administrative means that the hydrogen control function is maintained.</p> <p><u>AND</u></p> <p>B.2 Restore one hydrogen recombinder to OPERABLE status.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Every 12 hours thereafter</p> <p>7 days</p>
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

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### 3.7 PLANT SYSTEMS

#### 3.7.4 Atmospheric Vent Valves (AVVs)

LCO 3.7.4 [Two] AVVs [lines per steam generator] shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
MODE 4 when steam generator is relied upon for heat removal.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required AVV [line] inoperable.	A.1 <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block; text-align: center;"> <del>NOTE</del>                      LCO 3.0.4 is not applicable.                 </div> Restore required AVV [line] to OPERABLE status.	[7 days]
B. Two or more required AVV [lines] inoperable.	B.1 Restore one AVV [line] to OPERABLE status.	24 hours ]
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4 without reliance upon steam generator for heat removal.	6 hours  18 hours

## BASES

LCO 3.0.3  
(continued)

assemblies in fuel storage pool." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.14 are not met while in MODE 1, 2, 3, or 4, there is no safety benefit to be gained by placing the unit in a shutdown condition. The Required Action of LCO 3.7.14 of "Suspend movement of irradiated fuel assemblies in fuel storage pool" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.

LCO 3.0.4

allows

LCO 3.0.4 establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It ~~precludes~~ placing the unit in a MODE or other specified condition stated in that Applicability (e.g., Applicability desired to be entered) when 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.

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.

ff 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

(continued)



BASES

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LCO 3.0.4  
(continued)

provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result from any unit shutdown.

Exceptions to LCO 3.0.4 are stated in the individual Specifications. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.

LCO 3.0.4 is only applicable when entering MODE 4 from MODE 5, MODE 3 from MODE 4, MODE 2 from MODE 3, 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 MODES 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 MODES 1, 2, 3, or 4) because the ACTIONS or individual specifications sufficiently define the remedial measures to be taken. [In some cases (e.g., ...) these ACTIONS provide a Note that states "While this LCO is not met, entry into a MODE or other specified condition in the Applicability is not permitted, unless required to comply with ACTIONS." This Note is a requirement explicitly precluding entry into a MODE or other specified condition of the Applicability.]

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 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 those Surveillances that do not have to be performed 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.

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LCO 3.0.5

LCO 3.0.5 establishes the allowance for 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

(continued)

## BASES

SR 3.0.4  
(continued)

Insert 4

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.

However, in certain circumstances, failing to meet an SR will not result in SR 3.0.4 restricting a MODE change or other specified condition change. When a system, subsystem, division, component, device, or variable is inoperable or outside its specified limits, the associated SR(s) are not required to be performed, per SR 3.0.1, which states that surveillances do not have to be performed on inoperable equipment. When equipment is inoperable, SR 3.0.4 does not apply to the associated SR(s) since the requirement for the SR(s) to be performed is removed. Therefore, failing to perform the Surveillance(s) within the specified Frequency does not result in an SR 3.0.4 restriction to changing MODES or other specified conditions of the Applicability. However, since the LCO is not met in this instance, LCO 3.0.4 will govern any restrictions that may (or may not) apply to MODE or other specified condition changes.

The provisions of SR 3.0.4 shall not prevent entry into 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 result from any unit shutdown.

The precise requirements for performance of SRs are specified such that exceptions to SR 3.0.4 are not necessary. The specific time frames and conditions necessary for meeting the SRs are specified in the Frequency, in the Surveillance, or both. This allows performance of Surveillances when the prerequisite condition(s) specified in a Surveillance procedure require entry into the MODE or other specified condition in the Applicability of the associated LCO prior to the performance or completion of a Surveillance. A Surveillance that could not be performed until after entering the LCO Applicability would have its Frequency specified such that it is not "due" until the specific conditions needed are met. Alternately, the Surveillance may be stated in the form of a Note, as not required (to be met or performed) until a particular event, condition, or time has been reached. Further discussion of

(continued)

BASES

LCO

15. Emergency Feedwater Flow (continued)

delivering the correct flow to each SG. However, the primary indication used by the operator to ensure an adequate inventory is SG level.

RCS pressure is used by the operator to monitor the cooldown of the RCS following an SG tube rupture or small break LOCA. In addition, HPI flow is throttled based on RCS pressure and subcooled margin. The indication is also used to identify an LPI pump operating at system pressures above its shutoff head. If this condition exists, the operator is instructed to verify this condition exists, to verify HPI flow, and to terminate LPI flow prior to exceeding 30 minutes of LPI pump operation against a deadhead pressure. RCS pressure, in conjunction with LPI flow, is also used to determine if a core flood line break has occurred.

APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1, 2, and 3. These variables are related to the diagnosis and preplanned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1, 2, and 3. In MODES 4, 5, and 6, unit conditions are such that the likelihood of an event occurring that would require PAM instrumentation is low; therefore, the PAM instrumentation is not required to be OPERABLE in these MODES.

ACTIONS

The ACTIONS are modified by two Notes. Note 1 is added to the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require a unit shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to respond to an accident utilizing alternate instruments and methods, and the low probability of an event requiring these instruments.

(A) Note 2 is added to the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each

(continued)

*TSF-359, Rev. 16*

BASES

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LCO  
(continued)      The Remote Shutdown System instruments and control circuits covered by this LCO do not need to be energized to be considered OPERABLE. This LCO is intended to ensure the Remote Shutdown System instruments and control circuits will be OPERABLE if unit conditions require that the Remote Shutdown System be placed in operation.

---

APPLICABILITY      The Remote Shutdown System LCO is applicable in MODES 1, 2, and 3. This is required so that the unit can be placed and maintained in MODE 3 for an extended period of time from a location other than the control room.

This LCO is not applicable in MODE 4, 5, or 6. In these MODES, the unit is already subcritical and is in a condition of reduced RCS energy. Under these conditions, considerable time is available to restore necessary instrument and control functions if control room instruments become unavailable.

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ACTIONS

The ACTIONS is modified by two Notes. Note 1 excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS, even though the ACTIONS may eventually require a unit shutdown. This exception is acceptable due to the low probability of an event requiring these instruments.

① Note ② has been added to the ACTIONS to clarify the application of Completion Time rules. The Conditions of the Specification may be entered independently for each Function listed in Table 3.3.18-1. The Completion Time(s) of the inoperable channel(s)/train(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

A.1

Condition A addresses the situation where one or more required Functions of the Remote Shutdown System are inoperable. This includes any Function listed in Table 3.3.18-1 and the control and transfer switches.

(continued)

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TSTF-359, Rev. 6

BASES

ACTIONS

A.1 and A.2 (continued)

acceptable considering the frequency and adequacy of the RCS water inventory balance required by Required Action A.1.

Required Action A.1 and Required Action A.2 are modified by a Note indicating that the provisions of LCD 3.0.4 do not apply. As a result, a MODE change is allowed when the sump monitor is inoperable. This allowance is provided because other instrumentation is available to monitor RCS LEAKAGE.

B.1.1, B.1.2, and B.2

With required gaseous or particulate containment atmosphere radioactivity monitoring instrumentation channels inoperable, alternative action is required. Either grab samples of the containment atmosphere must be taken and analyzed or water inventory balances, in accordance with SR 3.4.13.1, must be performed to provide alternate periodic information. With a sample obtained and analyzed or a water inventory balance performed every 24 hours, the reactor may be operated for up to 30 days to allow restoration of at least one of the radioactivity monitors.

The 24 hour interval provides periodic information that is adequate to detect leakage. The 30 day Completion Time recognizes at least one other form of leak detection is available.

Required Actions B.1.1, B.1.2, and B.2 are modified by a Note indicating that the provisions of LCD 3.0.4 do not apply. As a result, a MODE change is allowed when the containment atmosphere radioactivity monitor is inoperable. This allowance is provided because other instrumentation is available to monitor RCS LEAKAGE.

C.1 and C.2

If a Required Action of Condition A or B cannot be met within the required Completion Time, the unit must be brought to a MODE in which the LCD does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating

(continued)

TSF-359, Rev. 6

BASES

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LCO  
(continued)      The SGTR accident analysis (Ref. 2) shows that the 2 hour site boundary dose levels are within acceptable limits. Violation of the LCO may result in reactor coolant radioactivity levels that could, in the event of an SGTR, lead to site boundary doses that exceed the 10 CFR 100 dose guideline limits.

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APPLICABILITY      In MODES 1 and 2, and in MODE 3 with RCS average temperature  $\geq 500^{\circ}\text{F}$ , operation within the LCO limits for DOSE EQUIVALENT I-131 and gross specific activity are necessary to contain the potential consequences of an SGTR to within the acceptable site boundary dose values.

For operation in MODE 3 with RCS average temperature  $< 500^{\circ}\text{F}$ , and in MODES 4 and 5, the release of radioactivity in the event of an SGTR is unlikely since the saturation pressure of the reactor coolant is below the lift pressure settings of the atmospheric dump valves and main steam safety valves.

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ACTIONS

A Note to the ACTIONS excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE(S) while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the significant conservatism incorporated into the specific activity limit, the low probability of an event which is limiting due to exceeding this limit, and the ability to restore transient specific activity excursions while the plant remains at, or proceeds to power operation.

A.1. and A.2

With the DOSE EQUIVALENT I-131 greater than the LCO limit, samples at intervals of 4 hours must be taken to demonstrate the limits of Figure 3.4.16-1 are not exceeded. The Completion Time of 4 hours is required to obtain and analyze a sample. Sampling must continue for trending.

(continued)

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BASES

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APPLICABILITY  
(continued)

requiring the hydrogen recombiners is low. Therefore, the hydrogen recombiners are not required in MODE 3 or 4.

In MODES 5 and 6, the probability and consequences of a LOCA are low, due to the pressure and temperature limitations. Therefore, hydrogen recombiners are not required in these MODES.

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ACTIONS

A.1

With one hydrogen recombiner inoperable, the inoperable recombiner must be restored to OPERABLE status within 30 days. In this condition, the remaining OPERABLE recombiner is adequate to perform the hydrogen control function. However, the overall reliability is reduced because a single failure in the OPERABLE recombiner could result in a reduced hydrogen control capability. The 30 day Completion Time is based on the availability of the other hydrogen recombiner, the small probability of a LOCA or SLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or SLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.

Required Action A.1 has been modified by a Note stating that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one hydrogen recombiner is inoperable. This allowance is based on the availability of the other hydrogen recombiner, the small probability of a LOCA or SLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or SLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.

B.1 and B.2

Reviewer's Note: This Condition is only allowed for units with an alternate hydrogen control system acceptable to the technical staff.

(continued)

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BASES (continued)

APPLICABILITY In MODES 1, 2, and 3, and in MODE 4, when steam generator is being relied upon for heat removal, the AVVs are required to be OPERABLE.

In MODES 5 and 6, an SGTR is not a credible event.

ACTIONS

A.1

~~Required Action A.1 is modified by a Note indicating that LCO 3.0.4 does not apply.~~

With one AVV [line] inoperable, action must be taken to restore the inoperable AVV to OPERABLE status. The 7 day Completion Time allows for redundant capability afforded by the remaining OPERABLE AVV and a nonsafety grade backup in the Steam Bypass System and MSSVs.

B.1

With more than one AVV [line] inoperable, action must be taken to restore [all but one] AVV [lines] to OPERABLE status. As the block valve can be closed to isolate an AVV, some repairs may be possible with the unit at power. The 24 hour Completion Time is reasonable to repair inoperable AVV [lines], based on the availability of the Steam Bypass System and MSSVs, and the low probability of an event occurring during this period that would require the AVV [lines].

C.1 and C.2

If the AVV [lines] cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 18 hours, without reliance upon the steam generator for heat removal. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

(continued)



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

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

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

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

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

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

Exceptions to this Specification are stated in the individual Specifications.

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

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

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

*Insert 1*

(continued)

### 3.0 LCO APPLICABILITY

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#### LCO 3.0.4 (continued)

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. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.

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

Reviewers's Note: LCO 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, LCO 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4. The MODE change restrictions in LCO 3.0.4 were previously applicable in all MODES. Before this version of LCO 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

#### 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 testing required to demonstrate OPERABILITY.

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(continued)

### 3.0 SR APPLICABILITY

SR 3.0.3 declared not met, and the applicable Condition(s) must be entered.  
(continued)

SR 3.0.4 Entry into a MODE or other <sup>only</sup>specified condition in the <sup>when</sup>Applicability of an LCO shall ~~not~~ be made ~~unless~~ the LCO's ~~Surveillances~~ have been met within their specified ~~Frequency~~. <sup>Insert 2</sup> This provision shall not prevent entry into 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.

SR 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.

Reviewer's Note: SR 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, SR 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4. The MODE change restrictions in SR 3.0.4 were previously applicable in all MODES. Before this version of SR 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

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### 3.3 INSTRUMENTATION

#### 3.3.3 Post Accident Monitoring (PAM) Instrumentation

LC0 3.3.3 The PAM instrumentation for each Function in Table 3.3.3-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

#### NOTES

1. ~~LC0 3.0.4 is not applicable.~~

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.8.	Immediately
C. -----NOTE----- Not applicable to hydrogen monitor channels.  One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days

(continued)

### 3.3 INSTRUMENTATION

#### 3.3.4 Remote Shutdown System

LCO 3.3.4 The Remote Shutdown System Functions in Table 3.3.4-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

#### NOTES

1. ~~LCO 3.0.4 is not applicable.~~

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 4.	12 hours

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### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

LCO 3.4.11 Each PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

#### NOTES

- 1 Separate Condition entry is allowed for each PORV.
- 2 LCO 3.0.4 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more PORVs inoperable and capable of being manually cycled.	A.1 Close and maintain power to associated block valve.	1 hour
B. One [or two] PORV[s] inoperable and not capable of being manually cycled.	B.1 Close associated block valve[s].	1 hour
	<u>AND</u>	
	B.2 Remove power from associated block valve[s].	1 hour
	<u>AND</u>	
	B.3 Restore PORV[s] to OPERABLE status.	72 hours

(continued)

### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.15 RCS Leakage Detection Instrumentation

LCO 3.4.15 The following RCS leakage detection instrumentation shall be OPERABLE:

- a. One containment sump (level or discharge flow) monitor;
- b. One containment atmosphere radioactivity monitor (gaseous or particulate); [and
- c. One containment air cooler condensate flow rate monitor].

APPLICABILITY: MODES 1, 2, 3, and 4.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required containment sump monitor inoperable.	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <del>NOTE</del>  <del>LCO 3.4.4 is not applicable.</del> </div>	
	A.1 Perform SR 3.4.13.1.	Once per 24 hours
	<p><u>AND</u></p> <p>A.2 Restore required containment sump monitor to OPERABLE status.</p>	30 days

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required containment atmosphere radioactivity monitor inoperable.	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><del>NOTE</del></p> <p>LCO 3.0.4 is not applicable.</p> </div>	
	B.1.1 Analyze grab samples of the containment atmosphere.	Once per 24 hours
	<u>OR</u>	
	B.1.2 Perform SR 3.4.13.1.	Once per 24 hours
	<div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;"><u>AND</u></p> </div>	
	B.2.1 Restore required containment atmosphere radioactivity monitor to OPERABLE status.	30 days
	<u>OR</u>	
	B.2.2 Verify containment air cooler condensate flow rate monitor is OPERABLE.	30 days
C. Required containment air cooler condensate flow rate monitor inoperable.	C.1 Perform SR 3.4.15.1.	Once per 8 hours
	<u>OR</u>	
	C.2 Perform SR 3.4.13.1.	Once per 24 hours

(continued)



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### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.16 RCS Specific Activity

LCO 3.4.16 The specific activity of the reactor coolant shall be within limits.

APPLICABILITY: MODES 1 and 2,  
MODE 3 with RCS average temperature ( $T_{avg}$ )  $\geq 500^{\circ}\text{F}$ .

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 > 1.0 $\mu\text{Ci/gm}$ .	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <del>Note</del>  <del>LCO 3.0.4 is not applicable.</del> </div>	Once per 4 hours
	<p>A.1 Verify DOSE EQUIVALENT I-131 within the acceptable region of Figure 3.4.16-1.</p> <p><u>AND</u></p> <p>A.2 Restore DOSE EQUIVALENT I-131 to within limit.</p>	48 hours
B. Gross specific activity of the reactor coolant not within limit.	B.1 Perform SR 3.4.16.2.	4 hours
	<p><u>AND</u></p> <p>B.2 Be in MODE 3 with <math>T_{avg} &lt; 500^{\circ}\text{F}</math>.</p>	6 hours

(continued)

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.8 Hydrogen Recombiners (Atmospheric, Subatmospheric, Ice Condenser, and Dual) (if permanently installed)

LCO 3.6.8 Two hydrogen recombiners shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One hydrogen recombiner inoperable.	<p>A.1 <span style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;"> <del>NOTE</del>                      LCO 3.6.4 is not applicable.                 </span></p> <p>Restore hydrogen recombiner to OPERABLE status.</p>	30 days
B. Two hydrogen recombiners inoperable.	<p>B.1 Verify by administrative means that the hydrogen control function is maintained.</p> <p><u>AND</u></p> <p>B.2 Restore one hydrogen recombiner to OPERABLE status.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>7 days</p>
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

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## 3.6 CONTAINMENT SYSTEMS

## 3.6.9 Hydrogen Mixing System (HMS) (Atmospheric, Ice Condenser, and Dual)

LCO 3.6.9 [Two] HMS trains shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

## ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One HMS train inoperable.	A.1 <div><del>NOTE</del> LCO 3.0.4 is not applicable.</div> Restore HMS train to OPERABLE status.	30 days
B. Two HMS trains inoperable.	B.1 Verify by administrative means that the hydrogen control function is maintained.  <u>AND</u> B.2 Restore one HMS train to OPERABLE status.	1 hour <u>AND</u> Once per 12 hours thereafter  7 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

### 3.7 PLANT SYSTEMS

#### 3.7.4 Atmospheric Dump Valves (ADV's)

LCO 3.7.4 [Three] ADV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
MODE 4 when steam generator is relied upon for heat removal.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required ADV line inoperable.	A.1 <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <del>NOTE</del>  <del>LCO 3.0.4 is not applicable.</del> </div> Restore required ADV line to OPERABLE status.	7 days
B. Two or more required ADV lines inoperable.	B.1 Restore one ADV line to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4 without reliance upon steam generator for heat removal.	6 hours  [18] hours

BASES

LCO 3.0.3  
(continued)

assemblies in the fuel storage pool." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.15 are not met while in MODE 1, 2, or 3, there is no safety benefit to be gained by placing the unit in a shutdown condition. The Required Action of LCO 3.7.15 of "Suspend movement of irradiated fuel assemblies in the fuel storage pool" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.

LCO 3.0.4

allows

LCO 3.0.4 establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It ~~precludes~~ placing the unit in a MODE or other specified condition stated in that Applicability (e.g., Applicability desired to be entered) when 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.

Insert 3

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.

The provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability

(continued)

BASES

LCO 3.0.4  
(continued)

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 result from any unit shutdown.

Exceptions to LCO 3.0.4 are stated in the individual Specifications. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.

LCO 3.0.4 is only applicable when entering MODE 4 from MODE 5, MODE 3 from MODE 4, MODE 2 from MODE 3, 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 MODES 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 MODES 1, 2, 3, or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken. [In some cases (e.g., ..) these ACTIONS provide a Note that states "While this LCO is not met, entry into a MODE or other specified condition in the Applicability is not permitted, unless required to comply with ACTIONS." This Note is a requirement explicitly precluding entry into a MODE or other specified condition of the Applicability.]

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 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 those Surveillances that do not have to be performed 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.

LCO 3.0.5

LCO 3.0.5 establishes the allowance for 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

(continued)

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BASES

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SR 3.0.4  
(continued)

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

Insert 4

However, in certain circumstances, failing to meet an SR will not result in SR 3.0.4 restricting a MODE change or other specified condition change. When a system, subsystem, division, component, device, or variable is inoperable or outside its specified limits, the associated SR(s) are not required to be performed, per SR 3.0.1, which states that surveillances do not have to be performed on inoperable equipment. When equipment is inoperable, SR 3.0.4 does not apply to the associated SR(s) since the requirement for the SR(s) to be performed is removed. Therefore, failing to perform the Surveillance(s) within the specified Frequency does not result in an SR 3.0.4 restriction to changing MODES or other specified conditions of the Applicability. However, since the LCO is not met in this instance, LCO 3.0.4 will govern any restrictions that may (or may not) apply to MODE or other specified condition changes.

The provisions of SR 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 result from any unit shutdown.

The precise requirements for performance of SRs are specified such that exceptions to SR 3.0.4 are not necessary. The specific time frames and conditions necessary for meeting the SRs are specified in the Frequency, in the Surveillance, or both. This allows performance of Surveillances when the prerequisite condition(s) specified in a Surveillance procedure require entry into the MODE or other specified condition in the Applicability of the associated LCO prior to the performance or completion of a Surveillance. A Surveillance that could not be performed until after entering the LCO Applicability, would have its Frequency specified such that it is not "due" until the specific conditions needed are met. Alternately, the Surveillance may be stated in the form of a Note as not required (to be met or performed) until a particular event,

(continued)

## BASES

## LCO

19. Auxiliary Feedwater Flow (continued)

At some units, AFW flow is a Type A variable because operator action is required to throttle flow during an SLB accident to prevent the AFW pumps from operating in runout conditions. AFW flow is also used by the operator to verify that the AFW System is delivering the correct flow to each SG. However, the primary indication used by the operator to ensure an adequate inventory is SG level.

## APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1, 2, and 3. These variables are related to the diagnosis and pre-planned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1, 2, and 3. In MODES 4, 5, and 6, unit conditions are such that the likelihood of an event that would require PAM instrumentation is low; therefore, the PAM instrumentation is not required to be OPERABLE in these MODES.

## ACTIONS

Note 1 has been added in the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require unit shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to respond to an accident using alternate instruments and methods, and the low probability of an event requiring these instruments.

④ Note ② has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed on Table 3.3.3-1. The Completion Time(s) of the inoperable channel(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

(continued)



BASES

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LCO  
(continued)

as one channel of any of the alternate information or control sources is OPERABLE.

The remote shutdown instrument and control circuits covered by this LCO do not need to be energized to be considered OPERABLE. This LCO is intended to ensure the instruments and control circuits will be OPERABLE if unit conditions require that the Remote Shutdown System be placed in operation.

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APPLICABILITY

The Remote Shutdown System LCO is applicable in MODES 1, 2, and 3. This is required so that the unit can be placed and maintained in MODE 3 for an extended period of time from a location other than the control room.

This LCO is not applicable in MODE 4, 5, or 6. In these MODES, the facility is already subcritical and in a condition of reduced RCS energy. Under these conditions, considerable time is available to restore necessary instrument control functions if control room instruments or controls become unavailable.

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ACTIONS

Note 1 is included which excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require a unit shutdown. This exception is acceptable due to the low probability of an event requiring the Remote Shutdown System and because the equipment can generally be repaired during operation without significant risk of spurious trip.

① Note ② has been added to the ACTIONS to clarify the application of Completion Time rules. Separate Condition entry is allowed for each Function listed on Table 3.3.4-1. The Completion Time(s) of the inoperable channel(s)/train(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

(continued)

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## BASES (continued)

## APPLICABILITY

In MODES 1, 2, and 3, the PORV and its block valve are required to be OPERABLE to limit the potential for a small break LOCA through the flow path. The most likely cause for a PORV small break LOCA is a result of a pressure increase transient that causes the PORV to open. Imbalances in the energy output of the core and heat removal by the secondary system can cause the RCS pressure to increase to the PORV opening setpoint. The most rapid increases will occur at the higher operating power and pressure conditions of MODES 1 and 2. The PORVs are also required to be OPERABLE in MODES 1, 2, and 3 to minimize challenges to the pressurizer safety valves.

Pressure increases are less prominent in MODE 3 because the core input energy is reduced, but the RCS pressure is high. Therefore, the LCO is applicable in MODES 1, 2, and 3. The LCO is not applicable in MODE 4 when both pressure and core energy are decreased and the pressure surges become much less significant. The PORV setpoint is reduced for LTOP in MODES 4, 5, and 6 with the reactor vessel head in place. LCO 3.4.12 addresses the PORV requirements in these MODES.

## ACTIONS

Note 1 has been added to clarify that all pressurizer PORVs are treated as separate entities, each with separate Completion Times (i.e., the Completion Time is on a component basis). The exception for LCO 3.0.4, Note 2, permits entry into MODES 1, 2, and 3 to perform cycling of the PORVs or block valves to verify their OPERABLE status. Testing is not performed in lower MODES.

A.1

With the PORVs inoperable and capable of being manually cycled, either the PORVs must be restored or the flow path isolated within 1 hour. The block valves should be closed but power must be maintained to the associated block valves, since removal of power would render the block valve inoperable. Although a PORV may be designated inoperable, it may be able to be manually opened and closed, and therefore, able to perform its function. PORV inoperability may be due to seat leakage, instrumentation problems, automatic control problems, or other causes that do not prevent manual use and do not create a possibility for a

(continued)

BASES

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ACTIONS

A.1 and A.2 (continued)

must be performed at an increased frequency of 24 hours to provide information that is adequate to detect leakage.

Restoration of the required sump monitor to OPERABLE status within a Completion Time of 30 days is required to regain the function after the monitor's failure. This time is acceptable, considering the Frequency and adequacy of the RCS water inventory balance required by Required Action A.1.

~~Required Action A.1 is modified by a Note that indicates that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when the containment sump monitor is inoperable. This allowance is provided because other instrumentation is available to monitor RCS leakage.~~

B.1.1, B.1.2, B.2.1, and B.2.2

With both gaseous and particulate containment atmosphere radioactivity monitoring instrumentation channels inoperable, alternative action is required. Either grab samples of the containment atmosphere must be taken and analyzed or water inventory balances, in accordance with SR 3.4.13.1, must be performed to provide alternate periodic information.

With a sample obtained and analyzed or water inventory balance performed every 24 hours, the reactor may be operated for up to 30 days to allow restoration of the required containment atmosphere radioactivity monitors. Alternatively, continued operation is allowed if the air cooler condensate flow rate monitoring system is OPERABLE, provided grab samples are taken every 24 hours.

The 24 hour interval provides periodic information that is adequate to detect leakage. The 30 day Completion Time recognizes at least one other form of Leakage detection is available.

~~Required Action B.1 and Required Action B.2 are modified by a Note that indicates that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when the gaseous and particulate containment atmosphere radioactivity monitor channel is inoperable. This allowance~~

(continued)

## BASES

## ACTIONS

B.1.1, B.1.2, B.2.1, and B.2.2 (continued)

is provided because other instrumentation is available to monitor for RCS LEAKAGE.

C.1 and C.2

With the required containment air cooler condensate flow rate monitor inoperable, alternative action is again required. Either SR 3.4.15.1 must be performed or water inventory balances, in accordance with SR 3.4.13.1, must be performed to provide alternate periodic information. Provided a CHANNEL CHECK is performed every 8 hours or a water inventory balance is performed every 24 hours, reactor operation may continue while awaiting restoration of the containment air cooler condensate flow rate monitor to OPERABLE status.

The 24 hour interval provides periodic information that is adequate to detect RCS LEAKAGE.

D.1 and D.2

With the required containment atmosphere radioactivity monitor and the required containment air cooler condensate flow rate monitor inoperable, the only means of detecting leakage is the containment sump monitor. This Condition does not provide the required diverse means of leakage detection. The Required Action is to restore either of the inoperable required monitors to OPERABLE status within 30 days to regain the intended leakage detection diversity. The 30 day Completion Time ensures that the plant will not be operated in a reduced configuration for a lengthy time period.

E.1 and E.2

If a Required Action of Condition A, B, [C], or [D] cannot be met, the plant must be brought to a MODE in which the requirement does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the

(continued)

BASES (continued)

ACTIONS

A Note to the ACTIONS excludes the MODE change restriction of LCO 3.8.4. This exception allows entry into the applicable MODE(S) while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the significant conservatism incorporated into the specific activity limit, the low probability of an event which is limiting due to exceeding this limit, and the ability to restore transient specific activity excursions while the plant remains at, or proceeds to power operation.

A.1 and A.2

With the DOSE EQUIVALENT I-131 greater than the LCO limit, samples at intervals of 4 hours must be taken to demonstrate that the limits of Figure 3.4.16-1 are not exceeded. The Completion Time of 4 hours is required to obtain and analyze a sample. Sampling is done to continue to provide a trend.

The DOSE EQUIVALENT I-131 must be restored to within limits within 48 hours. The Completion Time of 48 hours is required, if the limit violation resulted from normal iodine spiking.

B.1 and B.2

With the gross specific activity in excess of the allowed limit, an analysis must be performed within 4 hours to determine DOSE EQUIVALENT I-131. The Completion Time of 4 hours is required to obtain and analyze a sample.

The change within 6 hours to MODE 3 and RCS average temperature < 500°F lowers the saturation pressure of the reactor coolant below the setpoints of the main steam safety valves and prevents venting the SG to the environment in an SGTR event. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 below 500°F from full power conditions in an orderly manner and without challenging plant systems.

(continued)

BASES

ACTIONS

A.1 (continued)

Required Action A.1 has been modified by a Note that states the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one recombinder is inoperable. This allowance is based on the availability of the other hydrogen recombinder, the small probability of a LOCA or SLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or SLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.

B.1 and B.2

Reviewer's Note: This Condition is only allowed for units with an alternate hydrogen control system acceptable to the technical staff.

With two hydrogen recombinders inoperable, the ability to perform the hydrogen control function via alternate capabilities must be verified by administrative means within 1 hour. The alternate hydrogen control capabilities are provided by [the containment Hydrogen Purge System/hydrogen recombinder/Hydrogen Ignitor System/Hydrogen Mixing System/Containment Air Dilution System/Containment Inerting System]. The 1 hour Completion Time allows a reasonable period of time to verify that a loss of hydrogen control function does not exist. [Reviewer's Note: The following is to be used if a non-Technical Specification alternate hydrogen control function is used to justify this Condition: In addition, the alternate hydrogen control system capability must be verified once per 12 hours thereafter to ensure its continued availability.] [Both] the [initial] verification [and all subsequent verifications] may be performed as an administrative check by examining logs or other information to determine the availability of the alternate hydrogen control system. It does not mean to perform the Surveillances needed to demonstrate OPERABILITY of the alternate hydrogen control system. If the ability to perform the hydrogen control function is maintained, continued operation is permitted with two hydrogen recombinders inoperable for up to 7 days. Seven days is a reasonable time to allow two hydrogen recombinders to be inoperable because the hydrogen control function is

(continued)

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BASES

ACTIONS

A.1 (continued)

the hydrogen recombiners, Containment Spray System, Hydrogen Purge System, and hydrogen monitors.

Required Action A.1 has been modified by a Note that states the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one HMS train is inoperable. This allowance is based on the availability of the other HMS train, the small probability of a LOCA or SLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or SLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.

B.1 and B.2

Reviewer's Note: This Condition is only allowed for units with an alternate hydrogen control system acceptable to the technical staff.

With two HMS trains inoperable, the ability to perform the hydrogen control function via alternate capabilities must be verified by administrative means within 1 hour. The alternate hydrogen control capabilities are provided by [the containment Hydrogen Purge System/hydrogen recombiner/ Hydrogen Ignitor System/HMS/Containment Air Dilution System/ Containment Inerting System]. The 1 hour Completion Time allows a reasonable period of time to verify that a loss of hydrogen control function does not exist. [Reviewer's Note: The following is to be used if a non-Technical Specification alternate hydrogen control function is used to justify this Condition: In addition, the alternate hydrogen control system capability must be verified once per 12 hours thereafter to ensure its continued availability.] [Both] the [initial] verification [and all subsequent verifications] may be performed as an administrative check, by examining logs or other information to determine the availability of the alternate hydrogen control system. It does not mean to perform the Surveillances needed to demonstrate OPERABILITY of the alternate hydrogen control system. If the ability to perform the hydrogen control function is maintained, continued operation is permitted with two HMS trains inoperable for up to 7 days. Seven days

(continued)

## BASES

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LCO (continued) the condenser is unavailable for use with the Steam Bypass System.

An ADV is considered OPERABLE when it is capable of providing controlled relief of the main steam flow and capable of fully opening and closing on demand.

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APPLICABILITY In MODES 1, 2, and 3, and in MODE 4, when a steam generator is being relied upon for heat removal, the ADVs are required to be OPERABLE.

In MODE 5 or 6, an SGTR is not a credible event.

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## ACTIONS

### A.1

With one required ADV line inoperable, action must be taken to restore OPERABLE status within 7 days. The 7 day Completion Time allows for the redundant capability afforded by the remaining OPERABLE ADV lines, a nonsafety grade backup in the Steam Bypass System, and MSSVs. Required Action A.1 is modified by a Note indicating that LCO 3.0.4 does not apply.

### B.1

With two or more ADV lines inoperable, action must be taken to restore all but one ADV line to OPERABLE status. Since the block valve can be closed to isolate an ADV, some repairs may be possible with the unit at power. The 24 hour Completion Time is reasonable to repair inoperable ADV lines, based on the availability of the Steam Bypass System and MSSVs, and the low probability of an event occurring during this period that would require the ADV lines.

### C.1 and C.2

If the ADV lines cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least

(continued)

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

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

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

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

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

- a. MODE 3 within 7 hours;
- b. [MODE 4 within 13 hours]; and
- c. MODE 5 within 37 hours.

Exceptions to this Specification are stated in the individual Specifications.

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

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

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LCO 3.0.4

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

Insert 1 →

(continued)

### 3.0 LCO APPLICABILITY

#### LCO 3.0.4 (continued)

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. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.

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.

Reviewers's Note: LCO 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, LCO 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4. The MODE change restrictions in LCO 3.0.4 were previously applicable in all MODES. Before this version of LCO 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

#### 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 testing required to demonstrate OPERABILITY.

(continued)

### 3.0 SR APPLICABILITY

SR 3.0.3 declared not met, and the applicable Condition(s) must be entered.  
(continued)

SR 3.0.4

Entry into a MODE or other <sup>only</sup> specified condition in the <sup>when</sup> Applicability of an LCO shall ~~not~~ be made ~~unless~~ the LCO's Surveillances have been met within their specified Frequency. <sup>Insert 2</sup> This provision shall not prevent entry into 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 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4.

Reviewer's Note: SR 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, SR 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4. The MODE change restrictions in SR 3.0.4 were previously applicable in all MODES. Before this version of SR 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with two RPS trip units or associated instrument channels inoperable except for Condition C (excore channel not calibrated with incore detectors).	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">NOTE LCO 3.0.4 is not applicable.</p> </div> <p>B.1 Place one trip unit in bypass and place the other trip unit in trip.</p> <p><u>AND</u></p> <p>B.2 Restore one trip unit to OPERABLE status.</p>	1 hour
		[48] hours
C. One or more Functions with one or more power range excure channels not calibrated with the incore detectors.	C.1 Perform SR 3.3.1.3.	24 hours
	<p><u>OR</u></p> <p>C.2 Restrict THERMAL POWER to <math>\leq 90\%</math> of the maximum allowed THERMAL POWER level.</p>	24 hours
D. One or more Functions with one automatic bypass removal channel inoperable.	D.1 Disable bypass channel.	1 hour
	<p><u>OR</u></p> <p>D.2.1 Place affected trip units in bypass or trip.</p> <p><u>AND</u></p>	1 hour
		(continued)

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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. (continued)	<p>D.2.2.1 Restore bypass removal channel and affected trip units to OPERABLE status.</p> <p>[ OR ]</p> <p>D.2.2.2 Place affected trip units in trip.</p>	<p>[48] hours</p> <p>48 hours</p>
E. One or more Functions with two automatic bypass removal channels inoperable.	<p><del>NOTE</del> <del>LCO 3.0.4 is not applicable.</del></p> <p>E.1 Disable bypass channels.</p> <p>[ OR ]</p> <p>E.2.1 Place one affected trip unit in bypass and place the other in trip for each affected trip Function.</p> <p>[ AND ]</p> <p>E.2.2 Restore one bypass channel and the associated trip unit to OPERABLE status for each affected trip Function.</p>	<p>1 hour</p> <p>1 hour</p> <p>[48] hours</p>
F. Required Action and associated Completion Time not met.	F.1 Be in MODE 3.	6 hours

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two Power Rate of Change—High trip units or associated instrument channel inoperable.	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <del>NOTE</del>  <del>IC0 3.0.4 is not applicable.</del> </div>	
	<p>B.1 Place one trip unit in bypass and place the other trip unit in trip.</p> <p><u>AND</u></p> <p>B.2 Restore one trip unit to OPERABLE status.</p>	<p>1 hour</p> <p>48 hours</p>
C. One automatic bypass removal channel inoperable.	C.1 Disable bypass channel.	1 hour
	<u>OR</u>	
	C.2.1 Place affected trip unit in bypass or trip.	1 hour
	<p><u>AND</u></p> <p>C.2.2.1 Restore bypass removal channel and affected trip unit to OPERABLE status.</p> <p><u>OR</u></p> <p>C.2.2.2 Place affected trip units in trip.</p>	<p>[48] hours</p> <p>48 hours</p>

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two automatic bypass removal channels inoperable.	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <del>NOTE</del>  <del>LCO 3.0.4 is not applicable.</del> </div>	
	D.1 Disable bypass channels.	1 hour
	<u>OR</u>	
	D.2.1 Place one affected trip unit in bypass and place the other in trip.	1 hour
	<u>AND</u>	
	D.2.2 Restore one bypass channel and the associated trip unit to OPERABLE status.	[48] hours
E. Required Action and associated Completion Time not met.	E.1 Open all RTCBs.	6 hours

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more Functions with two ESFAS trip units or associated instrument channels (except CSAS) inoperable.	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <del>NOTE</del>  <del>LCD 3.0.4 is not applicable.</del> </div> <p>C.1 Place one trip unit in bypass and place the other trip unit in trip.</p> <p><u>AND</u></p> <p>C.2 Restore one trip unit to OPERABLE status.</p>	1 hour
		[48] hours
D. One or more Functions with one automatic bypass removal channel inoperable.	<p>D.1 Disable bypass channel.</p> <p><u>OR</u></p> <p>D.2.1 Place affected trip units in bypass or trip.</p> <p><u>AND</u></p> <p>D.2.2.1 Restore bypass removal channel and affected trip units to OPERABLE status.</p>	1 hour
	<p><u>OR</u></p> <p>D.2.2.2 Place affected trip units in trip.</p>	48 hours

(continued)



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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One or more Functions with two automatic bypass removal channels inoperable.	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <del>NOTE</del>  <del>ICO 3.0.4 is not applicable.</del> </div>	
	E.1 Disable bypass channels.	1 hour
	<u>OR</u>	
	E.2.1 Place one affected trip unit in bypass and place the other in trip for each affected ESFAS Function.	1 hour
	<u>AND</u>	
	E.2.2 Restore one bypass channel and the associated trip unit to OPERABLE status for each affected trip Function.	48 hours
F. Required Action and associated Completion Time not met.	F.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	F.2 Be in MODE 4.	[12] hours

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with two channels per DG inoperable.	B.1 Enter applicable Conditions and Required Actions for the associated DG made inoperable by DG—LOVS instrumentation.	1 hour
	<p><u>OR</u></p> <p>B.2.1</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;"><del>NOTE</del></p> <p style="text-align: center;"><del>LCO 3.0.4 is not applicable.</del></p> </div> <p>Place one channel in bypass and the other channel in trip.</p>	1 hour
	<p><u>AND</u></p> <p>B.2.2 Restore one channel to OPERABLE status.</p>	[48] hours
C. One or more Functions with more than two channels inoperable.	C.1 Restore all but two channels to OPERABLE status.	1 hour
D. Required Action and associated Completion Time not met.	D.1 Enter applicable Conditions and Required Actions for the associated DG made inoperable by DG—LOVS instrumentation.	Immediately

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### 3.3 INSTRUMENTATION

#### 3.3.11 Post Accident Monitoring (PAM) Instrumentation (Analog)

LCO 3.3.11 The PAM instrumentation for each Function in Table 3.3.11-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

#### NOTES

1. ~~LCO 3.0.4 is not applicable.~~

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.8.	Immediately
C. -----NOTE----- Not applicable to hydrogen monitor channels.  One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days

(continued)

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### 3.3 INSTRUMENTATION

#### 3.3.12 Remote Shutdown System (Analog)

LCO 3.3.12 The Remote Shutdown System Functions in Table 3.3.12-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

#### NOTES

1. LCO 3.0.4 is not applicable.

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Functions to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND B.2 Be in MODE 4.	[12] hours

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### 3.3 INSTRUMENTATION

#### 3.3.1 Reactor Protective System (RPS) Instrumentation—Operating (Digital)

LCO 3.3.1 Four RPS trip and bypass removal channels for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1.

#### ACTIONS

#### NOTES

1. Separate Condition entry is allowed for each RPS Function.
2. If a channel is placed in bypass, continued operation with the channel in the bypassed condition for the Completion Time specified by Required Action A.2 or C.2.2 shall be reviewed in accordance with Specification 5.5.1.2.e.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one automatic RPS trip channel inoperable.	<p>A.1 Place channel in bypass or trip.</p> <p><u>AND</u></p> <p>A.2 Restore channel to OPERABLE status.</p>	<p>1 hour</p> <p>Prior to entering MODE 2 following next MODE 5 entry</p>
B. One or more Functions with two automatic RPS trip channels inoperable.	<p>B.1</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><del>NOTE</del> LCO 3.0.4 is not applicable.</p> </div> <p>Place one channel in bypass and the other in trip.</p>	<p>1 hour</p>

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more Functions with one automatic bypass removal channel inoperable.	<p>C.1 Disable bypass channel.</p> <p><u>OR</u></p> <p>C.2.1 Place affected automatic trip channel in bypass or trip.</p> <p><u>AND</u></p> <p>C.2.2 Restore bypass removal channel and associated automatic trip channel to OPERABLE status.</p>	<p>1 hour</p> <p>1 hour</p> <p>Prior to entering MODE 2 following next MODE 5 entry</p>
D. One or more Functions with two automatic bypass removal channels inoperable.	<p><del>NOTE</del> <del>LCO 3.0.4 is not applicable.</del></p> <p>D.1 Disable bypass channels.</p> <p><u>OR</u></p> <p>D.2 Place one affected automatic trip channel in bypass and place the other in trip.</p>	<p>1 hour</p> <p>1 hour</p>
E. One or more core protection calculator (CPC) channels with a cabinet high temperature alarm.	E.1 Perform CHANNEL FUNCTIONAL TEST on affected CPC.	12 hours

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two RPS logarithmic power level trip channels inoperable.	<p>B.1 <span style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;"> <del>NOTE</del>                      LCO 3.0.4 is not applicable.                 </span></p> <p>Place one channel in bypass and place the other in trip.</p>	1 hour
C. One automatic bypass removal channel inoperable.	<p>C.1 Disable bypass channel.</p> <p><u>OR</u></p> <p>C.2.1 Place affected automatic trip channel in bypass or trip.</p> <p><u>AND</u></p> <p>C.2.2 Restore bypass removal channel and associated automatic trip channel to OPERABLE status.</p>	<p>1 hour</p> <p>1 hour</p> <p>Prior to entering MODE 2 following next MODE 5 entry</p>
D. Two automatic bypass removal channels inoperable.	<p><span style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;"> <del>NOTE</del>                      LCO 3.0.4 is not applicable.                 </span></p> <p>D.1 Disable bypass channels.</p> <p><u>OR</u></p>	<p>1 hour</p> <p>(continued)</p>

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with two automatic ESFAS trip channels inoperable.	<p>B.1</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><del>NOTE</del> LCO 3.0.4 is not applicable.</p> </div> <p>Place one channel in bypass and the other in trip.</p>	1 hour
C. One or more Functions with one automatic bypass removal channel inoperable.	<p>C.1 Disable bypass channel.</p> <p><u>OR</u></p> <p>C.2.1 Place affected automatic trip channel in bypass or trip.</p> <p><u>AND</u></p> <p>C.2.2 Restore bypass removal channel and associated automatic trip channel to OPERABLE status.</p>	<p>1 hour</p> <p>1 hour</p> <p>Prior to entering MODE 2 following next MODE 5 entry</p>
D. One or more Functions with two automatic bypass removal channels inoperable.	<div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><del>NOTE</del> LCO 3.0.4 is not applicable.</p> </div> <p>D.1 Disable bypass channels.</p> <p><u>OR</u></p>	<p>1 hour</p> <p>(continued)</p>



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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with two channels per DG inoperable.	B.1 Enter applicable Conditions and Required Actions for the associated DG made inoperable by DG-LOVS instrumentation.	1 hour
	<p><u>OR</u></p> <p>B.2</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">NOTE</p> <p>LCO 3.0.4 is not applicable.</p> </div> <p>Place one channel in bypass and the other channel in trip.</p>	1 hour
C. One or more Functions with more than two channels inoperable.	C.1 Restore all but two channels to OPERABLE status.	1 hour
D. Required Action and associated Completion Time not met.	D.1 Enter applicable Conditions and Required Actions for the associated DG made inoperable by DG-LOVS instrumentation.	Immediately

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### 3.3 INSTRUMENTATION

#### 3.3.11 Post Accident Monitoring (PAM) Instrumentation (Digital)

LCO 3.3.11 The PAM instrumentation for each Function in Table 3.3.11-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

#### NOTES

1. ~~LCO 3.0.4 not applicable.~~

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.8.	Immediately
C. <del>NOTE</del> Not applicable to hydrogen monitor channels.  One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days

(continued)

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### 3.3 INSTRUMENTATION

#### 3.3.12 Remote Shutdown System (Digital)

LCD 3.3.12 The Remote Shutdown System Functions in Table 3.3.12-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

#### NOTES

1 ~~LCD 3.0.4 is not applicable.~~

2 Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Functions to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND B.2 Be in MODE 4.	[12] hours

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### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

LCO 3.4.11 Each PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

#### NOTES

1. Separate Condition entry is allowed for each PORV.
2. LCO 3.4.4 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more PORVs inoperable and capable of being manually cycled.	A.1 Close and maintain power to associated block valve.	1 hour
B. One PORV inoperable and not capable of being manually cycled.	B.1 Close associated block valve.	1 hour
	<u>AND</u> B.2 Remove power from associated block valve.	1 hour
	<u>AND</u> B.3 Restore PORV to OPERABLE status.	72 hours

(continued)

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### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.15 RCS Leakage Detection Instrumentation

LCD 3.4.15 [Two of] the following RCS leakage detection instrumentation shall be OPERABLE:

- a. One containment sump monitor; [and]
- b. One containment atmosphere radioactivity monitor (gaseous or particulate); [and]
- c. One containment air cooler condensate flow rate monitor.]

APPLICABILITY: MODES 1, 2, 3, and 4.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. Required containment sump monitor inoperable.</p> <p><u>[OR</u></p> <p>Required containment air cooler flow rate monitor inoperable.]</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><del>NOTE</del></p> <p><del>LCO 3.0.4 is not applicable</del></p> </div>	
	<p>A.1 Perform SR 3.4.13.1.</p> <p><u>AND</u></p> <p>A.2 Restore containment sump monitor to OPERABLE status.</p>	<p>Once per 24 hours</p> <p>30 days</p>

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required containment atmosphere radioactivity monitor inoperable.	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">NOTE</p> <p>LCO 3.0.4 is not applicable.</p> </div>	
	B.1.1 Analyze grab samples of the containment atmosphere.	Once per 24 hours
	<u>OR</u>	
	B.1.2 Perform SR 3.4.13.1.	Once per 24 hours
	<u>AND</u>	
	B.2.1 Restore required containment atmosphere radioactivity monitor to OPERABLE status.	30 days
	<u>OR</u>	
	B.2.2 Verify containment air cooler condensate flow rate monitor is OPERABLE.	30 days
C. Required containment air cooler condensate flow rate monitor inoperable.	C.1 Perform SR 3.4.15.1.	Once per 8 hours
	<u>OR</u>	
	C.2 Perform SR 3.4.13.1.	Once per 24 hours

(continued)

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### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.16 RCS Specific Activity

LCO 3.4.16 The specific iodine activity of the reactor coolant shall be within limits.

APPLICABILITY: MODES 1 and 2,  
MODE 3 with RCS average temperature ( $T_{avg}$ )  $\geq 500^{\circ}\text{F}$ .

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 > 1.0 $\mu\text{Ci/gm}$ .	<div style="border: 1px solid black; border-radius: 10px; padding: 5px; text-align: center;"> <p><del>NOTE</del> <del>LCO 3.0.4 is not applicable</del></p> </div>	
	A.1 Verify DOSE EQUIVALENT I-131 within the acceptable region of Figure 3.4.16-1.	Once per 4 hours
	<p><u>AND</u></p> <p>A.2 Restore DOSE EQUIVALENT I-131 to within limit.</p>	48 hours

(continued)

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### 3.6 CONTAINMENT SYSTEMS

#### 3.6.8 Hydrogen Recombiners (Atmospheric and Dual) (if permanently installed)

LCO 3.6.8 [Two] hydrogen recombiners shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One hydrogen recombiner inoperable.	<p>A.1</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><del>NOTE</del> LCO 3.0.4 is not applicable.</p> </div> <p>Restore hydrogen recombiner to OPERABLE status.</p>	30 days
B. Two hydrogen recombiners inoperable.	<p>B.1 Verify by administrative means that the hydrogen control function is maintained.</p> <p><u>AND</u></p> <p>B.2 Restore one hydrogen recombiner to OPERABLE status.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Every 12 hours thereafter</p> <p>7 days</p>
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours



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### 3.6 CONTAINMENT SYSTEMS

#### 3.6.9 Hydrogen Mixing System (HMS) (Atmospheric and Dual)

LCO 3.6.9 [Two] HMS trains shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One HMS train inoperable.	<p>A.1</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><del>NOTE--</del> LCO 3.0.4 is not applicable.</p> </div> <p>Restore HMS train to OPERABLE status.</p>	30 days
B. Two HMS trains inoperable.	<p>B.1 Verify by administrative means that the hydrogen control function is maintained.</p> <p><u>AND</u></p> <p>B.2 Restore one HMS train to OPERABLE status.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Every 12 hours thereafter</p> <p>7 days</p>
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

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### 3.7 PLANT SYSTEMS

#### 3.7.4 Atmospheric Dump Valves (ADV's)

LCO 3.7.4 [Two] ADV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
[MODE 4 when steam generator is being relied upon for heat removal].

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required ADV line inoperable.	A.1 <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;"> <p><del>NOTE</del> LCO 3.0.4 is not applicable.</p> </div> Restore ADV line to OPERABLE status.	7 days
B. [Two] or more [required] ADV lines inoperable.	B.1 Restore [one] ADV line to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4 without reliance upon steam generator for heat removal.	6 hours [12] hours

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BASES

LCO 3.0.3  
(continued)

assemblies in the fuel storage pool." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.16 are not met while in MODE 1, 2, or 3, there is no safety benefit to be gained by placing the unit in a shutdown condition. The Required Action of LCO 3.7.16 of "Suspend movement of irradiated fuel assemblies in fuel storage pool" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.

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

LCO 3.0.4

allows

LCO 3.0.4 establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It ~~precludes~~ placing the unit in a MODE or other specified condition stated in that Applicability (e.g., Applicability desired to be entered) when the following exist:

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

Insert 3

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.

(continued)

BASES

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LCO 3.0.4  
(continued)

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 result from any unit shutdown.

~~Exceptions to LCO 3.0.4 are stated in the individual Specifications. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.~~

LCO 3.0.4 is only applicable when entering MODE 4 from MODE 5, MODE 3 from MODE 4, MODE 2 from MODE 3, 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 MODES 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 MODES 1, 2, 3, or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken. [In some cases (e.g., ...) these ACTIONS provide a Note that states "While this LCO is not met, entry into a MODE or other specified condition in the Applicability is not permitted, unless required to comply with ACTIONS." This Note is a requirement explicitly precluding entry into a MODE or other specified condition of the Applicability.]

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 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 those Surveillances that do not have to be performed 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.

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LCO 3.0.5

LCO 3.0.5 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with

(continued)

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BASES

SR 3.0.3  
(continued)

period, then the equipment is inoperable, or the variable is outside the specified limits and the Completion Times of the Required Actions for the applicable LCO Conditions begin immediately upon the failure of the Surveillance.

Completion of the Surveillance within the delay period allowed by this Specification, or within the Completion Time of the ACTIONS, restores compliance with SR 3.0.1.

SR 3.0.4

SR 3.0.4 establishes the requirement that all applicable SRs must be met before entry into a MODE or other specified Condition in the Applicability.

This Specification ensures that system and component OPERABILITY requirements and variable limits are met before entry into MODES or other specified conditions in the Applicability for which these systems and components ensure safe operation of the unit.

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.

Insert 4

However, in certain circumstances, failing to meet an SR will not result in SR 3.0.4 restricting a MODE change or other specified condition change. When a system, subsystem, division, component, device, or variable is inoperable or outside its specified limits, the associated SR(s) are not required to be performed, per SR 3.0.1, which states that surveillances do not have to be performed on inoperable equipment. When equipment is inoperable, SR 3.0.4 does not apply to the associated SR(s) since the requirement for the SR(s) to be performed is removed. Therefore, failing to perform the Surveillance(s) within the specified Frequency does not result in an SR 3.0.4 restriction to changing MODES or other specified conditions of the Applicability. However, since the LCO is not met in this instance, LCO 3.0.4 will govern any restrictions that may (or may not) apply to MODE or other specified condition changes.

The provisions of SR 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability

(continued)

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BASES

ACTIONS

B.1 and B.2 (continued)

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. MODE changes in this configuration are allowed to permit maintenance and testing on one of the inoperable channels. In this configuration, the protection system is in a one-out-of-two logic, and the probability of a common cause failure affecting both of the OPERABLE channels during the [48] hours permitted is remote.

Required Action B.1 provides for placing one inoperable channel in bypass and the other channel in trip within the Completion Time of 1 hour. This Completion Time is sufficient to allow the operator to take all appropriate actions for the failed channels while ensuring that the risk involved in operating with the failed channels is acceptable. With one channel of protective instrumentation bypassed, the RPS is in a two-out-of-three logic; but with another channel failed, the RPS may be operating in a two-out-of-two logic. This is outside the assumptions made in the analyses and should be corrected. To correct the problem, the second channel is placed in trip. This places the RPS in a one-out-of-two logic. If any of the other OPERABLE channels receives a trip signal, the reactor will trip.

One channel should be restored to OPERABLE status within [48] hours for reasons similar to those stated under Condition A. After one channel is restored to OPERABLE status, the provisions of Condition A still apply to the remaining inoperable channel. Therefore, the channel that is still inoperable after completion of Required Action B.2 must be placed in trip if more than [48] hours have elapsed since the initial channel failure.

C.1 and C.2

The excore detectors are used to generate the internal ASI used as an input to the TM/LP and APD—High trips. Incore detectors provide a more accurate measurement of ASI. If one or more excore detectors cannot be calibrated to match incore detectors, power is restricted or reduced during

(continued)

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BASES

ACTIONS

C.1 and C.2 (continued)

subsequent operations because of increased uncertainty associated with using uncalibrated excore detectors.

The Completion Time of 24 hours is adequate to perform the SR while minimizing the risk of operating in an unsafe condition.

D.1, D.2.1, D.2.2.1, and D.2.2.2

Condition D applies to one automatic bypass removal channel inoperable. If the bypass removal channel for any operating bypass cannot be restored to OPERABLE status, the associated RPS channel may be considered OPERABLE only if the bypass is not in effect. Otherwise, the affected RPS channel must be declared inoperable, as in Condition A, and the bypass either removed or the bypass removal channel repaired. The Bases for Required Actions and Completion Times are the same as discussed for Condition A.

E.1, E.2.1, and E.2.2

Condition E applies to two inoperable automatic bypass removal channels. If the bypass removal channels cannot be restored to OPERABLE status, the associated RPS channel may be considered OPERABLE only if the bypass is not in effect. Otherwise, the affected RPS channels must be declared inoperable, as in Condition B, and the bypass either removed or the bypass removal channel repaired. Also, Required Action E.2.2 provides for the restoration of the one affected automatic trip channel to OPERABLE status within the rules of Completion Time specified under Condition B. Completion Times are consistent with Condition B.

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. MODE changes in this configuration are allowed to permit maintenance and testing on one of the inoperable channels. In this configuration, the protection system is in a one-out-of-two logic, and the probability of a common cause

(continued)

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BASES

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ACTIONS

E.1, E.2.1, and E.2.2 (continued)

~~failure affecting both of the OPERABLE channels during the [48] hours permitted is remote.~~

F.1

Condition F is entered when the Required Action and associated Completion Time of Condition A, B, C, D, or E are not met.

If the Required Actions associated with these Conditions cannot be completed within the required Completion Times, the reactor must be brought to a MODE in which the Required Actions do not apply. The allowed Completion Time of 6 hours to be in MODE 3 is reasonable, based on operating experience, for reaching the required MODE from full power conditions in an orderly manner and without challenging plant systems.

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SURVEILLANCE  
REQUIREMENTS

The SRs for any particular RPS Function are found in the SR column of Table 3.3.1-1 for that Function. Most Functions are subject to CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, CHANNEL CALIBRATION, and response time testing.

Reviewer's Note: In order for a plant to take credit for topical reports as the basis for justifying Frequencies, topical reports must be supported by an NRC staff SER that establishes the acceptability of each topical report for that plant (Ref. 8).

SR 3.3.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the two instrument channels could be an indication

(continued)



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## BASES

### ACTIONS

#### B.1 and B.2 (continued)

actions for the failed channels, while ensuring the risk involved in operating with the failed channels is acceptable. With one channel of protective instrumentation bypassed, the RPS is in a two-out-of-three logic; but with another channel failed, the RPS may be operating in a two-out-of-two logic. This is outside the assumptions made in the analyses and should be corrected. To correct the problem, the second channel is placed in trip. This places the RPS in a one-out-of-two logic. If any of the other OPERABLE channels receives a trip signal, the reactor will trip.

The bypassed channel should be restored to OPERABLE status within 48 hours for reasons similar to those stated under Condition A. After one channel is restored to OPERABLE status, the provisions of Condition A still apply to the remaining inoperable channel. Therefore, the channel that is still inoperable after completion of Required Action B.2 shall be placed in trip if more than 48 hours have elapsed since the initial channel failure.

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. MODE changes in this configuration are allowed to permit maintenance and testing on one of the inoperable channels. In this configuration, the protection system is in a one-out-of-two logic, and the probability of a common cause failure affecting both of the OPERABLE channels during the [48] hours permitted is remote.

#### C.1, C.2.1, C.2.2.1, and C.2.2.2

Condition C applies to one automatic bypass removal channel inoperable. If the bypass removal channel cannot be restored to OPERABLE status, the associated Power Rate of Change—High RPS channel may be considered OPERABLE only if the bypass is not in effect. Otherwise, the affected RPS channel must be declared inoperable, as in Condition A, and the bypass either removed or the bypass removal channel repaired. The Bases for the Required Actions and Completion Times are the same as discussed for Condition A.

(continued)

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BASES

ACTIONS  
(continued)

D.1, D.2.1, and D.2.2

Condition D applies to two inoperable automatic bypass removal channels. If the bypass removal channels cannot be restored to OPERABLE status, the associated Power Rate of Change—High RPS channel may be considered OPERABLE only if the bypass is not in effect. Otherwise, the affected RPS channels must be declared inoperable, as in Condition B, and the bypass either removed or the bypass removal channel repaired. Also, Required Action D.2.2 provides for the restoration of the one affected automatic trip channel to OPERABLE status within the rules of Completion Time specified under Condition B. Completion Times are consistent with Condition B.

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. MODE changes in this configuration are allowed to permit maintenance and testing on one of the inoperable channels. In this configuration, the protection system is in a one-out-of-two logic, and the probability of a common cause failure affecting both of the OPERABLE channels during the 48 hours permitted is remote.

E.1

Condition E is entered when the Required Actions and associated Completion Times of Condition A, B, C, or D are not met.

If Required Actions associated with these Conditions cannot be completed within the required Completion Time, opening the RTCBs brings the reactor to a MODE where the LCO does not apply and ensures no CEA withdrawal will occur. The basis for the Completion Time of 6 hours is that it is adequate to complete the Required Actions without challenging plant systems, including the insertion of CEAs for plants that normally maintain CEAs withdrawn when shut down.

(continued)

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BASES

ACTIONS

C.1 and C.2 (continued)

5. Recirculation Actuation Signal  
Refueling Water Tank Level—Low
6. Auxiliary Feedwater Actuation Signal  
Steam Generator Level—Low  
Steam Generator Pressure Difference—High

With two inoperable channels, one channel should be placed in bypass, and the other channel should be placed in trip within the 1 hour Completion Time. With one channel of protective instrumentation bypassed, the ESFAS Function is in two-out-of-three logic, but with another channel failed the ESFAS may be operating with a two-out-of-two logic. This is outside the assumptions made in the analyses and should be corrected. To correct the problem, the second channel is placed in trip. This places the ESFAS in a one-out-of-two logic. If any of the other OPERABLE channels receives a trip signal, ESFAS actuation will occur.

One of the failed channels should be restored to OPERABLE status within [48] hours, for reasons similar to those stated under Condition B. After one channel is restored to OPERABLE status, the provisions of Condition B still apply to the remaining inoperable channel. Therefore, the channel that is still inoperable after completion of Required Action C.2 must be placed in trip if more than [48] hours has elapsed since the initial channel failure.

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. MODE changes in this configuration are allowed, to permit maintenance and testing on one of the inoperable channels. In this configuration, the protection system is in a one-out-of-two logic, and the probability of a common cause failure affecting both of the OPERABLE channels during the [48] hours permitted is remote.

D.1, D.2.1, D.2.2.1, and D.2.2.2

Condition D applies to the failure of one bypass removal channel.

(continued)

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BASES

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ACTIONS

E.1, E.2.1, and E.2.2 (continued)

logic. Failures in the actuation subsystems, including the manual bypass key switches, are considered Actuation Logic failures and are addressed in LCO 3.3.5.

In Condition E, it is permissible to continue operation with two bypass permissive channels failed, providing the bypasses are disabled in a similar manner as discussed for Condition D.

If the failed bypasses cannot be disabled, actions to address the inoperability of the affected automatic trip channels must be taken. Required Action E.2.1 and Required Action E.2.2 are equivalent to the Required Actions for a two automatic trip channel failure (Condition C). Also similar to Condition C, after one set of inoperable channels is restored, the provisions of Condition D still apply to the remaining inoperable channel, with the Completion Time measured from the point of the initial bypass channel failure. The 1 hour and [48] hour Completion Times have the same bases as discussed for Condition C.

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. MODE changes in this configuration are allowed, to permit maintenance and testing on one of the inoperable channels. In this configuration, the protection system is in a one-out-of-two logic, and the probability of a common cause failure affecting both of the OPERABLE channels during the 48 hours permitted is remote.

F.1 and F.2

If the Required Actions and associated Completion Times of Condition A, B, C, D, or E are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within [12] hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

(continued)

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BASES

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ACTIONS  
(continued)

B.1, B.2.1, and B.2.2

Condition B applies if two channels are inoperable for one or more Functions per DG.

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES, even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.

Restoring at least one channel to OPERABLE status is the preferred action. If the channel cannot be restored to OPERABLE status within 1 hour, the Conditions and Required Actions for the associated DG made inoperable by DG—LOVS instrumentation are required to be entered. Alternatively, one affected channel is required to be bypassed and the other is tripped, in accordance with Required Action B.2.1. This places the Function in one-out-of-two logic. The 1 hour Completion Time is sufficient to perform the Required Actions.

Once Required Action B.2.1 has been complied with, Required Action B.2.2 allows [48] hours to repair the bypassed or inoperable channel.

After one channel is restored to OPERABLE status, the provisions of Condition A still apply to the remaining inoperable channel. Therefore, the channel that is still inoperable after completion of Required Action B.2.2 shall be placed in trip if more than [48] hours have elapsed since the initial channel failure.

C.1

Condition C applies when more than two undervoltage or Degraded Voltage channels on a single bus are inoperable.

Required Action C.1 requires all but two channels to be restored to OPERABLE status within 1 hour. With more than two channels inoperable, the logic is not capable of providing a DG—LOVS signal for valid Loss of Voltage or Degraded Voltage conditions. The 1 hour Completion Time is

(continued)

## BASES

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LCO  
(continued)      indication is not needed to determine status. Therefore, the position indication for valves in this state is not required to be OPERABLE.

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APPLICABILITY      The PAM instrumentation LCO is applicable in MODES 1, 2, and 3. These variables are related to the diagnosis and preplanned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1, 2, and 3. In MODES 4, 5, and 6, plant conditions are such that the likelihood of an event occurring that would require PAM instrumentation is low; therefore, PAM instrumentation is not required to be OPERABLE in these MODES.

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## ACTIONS

Note 1 has been added in the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the ACTIONS, even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to monitor an accident using alternate instruments and methods, and the low probability of an event requiring these instruments.

A → Note 2 has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.11-1. The Completion Time(s) of the inoperable channel(s) of a Function will be tracked separately for each Function, starting from the time the Condition was entered for that Function.

### A.1

When one or more Functions have one required channel that is inoperable, the required inoperable channel must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channel (or in the case of a function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the

(continued)

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## BASES

### LCO (continued)

as one channel of any of the alternate information or control sources for each Function is OPERABLE.

The Remote Shutdown System instrumentation and control circuits covered by this LCO do not need to be energized to be considered OPERABLE. This LCO is intended to ensure that the instrument and control circuits will be OPERABLE if plant conditions require that the Remote Shutdown System be placed in operation.

### APPLICABILITY

The Remote Shutdown System LCO is applicable in MODES 1, 2, and 3. This is required so that the unit can be placed and maintained in MODE 3 for an extended period of time from a location other than the control room.

This LCO is not applicable in MODE 4, 5, or 6. In these MODES, the unit is already subcritical and in the condition of reduced RCS energy. Under these conditions, considerable time is available to restore necessary instrument control Functions if control room instruments or control become unavailable.

### ACTIONS

A Note has been included that excludes the MODE change restrictions of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS, even though the ACTIONS may eventually require a plant shutdown. This is acceptable due to the low probability of an event requiring this system. The Remote Shutdown System equipment can generally be repaired during operation without significant risk of spurious trip.

A Remote Shutdown System division is inoperable when each Function is not accomplished by at least one designated Remote Shutdown System channel that satisfies the OPERABILITY criteria for the channel's Function. These criteria are outlined in the LCO section of the Bases.

(A) Note 2 has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.12-1. The Completion Time(s) of the inoperable channel(s)/train(s) of a Function will be

(continued)

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BASES

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ACTIONS

B.1 (continued)

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES, even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.

Required Action B.1 provides for placing one inoperable channel in bypass and the other channel in trip within the Completion Time of 1 hour. This Completion Time is sufficient to allow the operator to take all appropriate actions for the failed channels while ensuring the risk involved in operating with the failed channels is acceptable. With one channel of protective instrumentation bypassed, the RPS is in a two-out-of-three logic; but with another channel failed, the RPS may be operating in a two-out-of-two logic. This is outside the assumptions made in the analyses and should be corrected. To correct the problem, the second channel is placed in trip. This places the RPS in a one-out-of-two logic. If any of the other OPERABLE channels receives a trip signal, the reactor will trip.

One of the two inoperable channels will need to be restored to operable status prior to the next required CHANNEL FUNCTIONAL TEST, because channel surveillance testing on an OPERABLE channel requires that the OPERABLE channel be placed in bypass. However, it is not possible to bypass more than one RPS channel, and placing a second channel in trip will result in a reactor trip. Therefore, if one RPS channel is in trip and a second channel is in bypass, a third inoperable channel would place the unit in LCO 3.0.3.

C.1, C.2.1, and C.2.2

Condition C applies to one automatic bypass removal channel inoperable. If the inoperable bypass removal channel for any bypass channel cannot be restored to OPERABLE status within 1 hour, the associated RPS channel may be considered OPERABLE only if the bypass is not in effect. Otherwise, the affected RPS channel must be declared inoperable, as in Condition A, and the affected automatic trip channel placed

(continued)



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## BASES

### ACTIONS

#### C.1, C.2.1, and C.2.2 (continued)

in bypass or trip. The bypass removal channel and the automatic trip channel must be repaired prior to entering MODE 2 following the next MODE 5 entry. The Bases for the Required Actions and required Completion Times are consistent with Condition A.

#### D.1 and D.2

Condition D applies to two inoperable automatic bypass removal channels. If the bypass removal channels for two operating bypasses cannot be restored to OPERABLE status within 1 hour, the associated RPS channel may be considered OPERABLE only if the bypass is not in effect. Otherwise, the affected RPS channels must be declared inoperable, as in Condition B, and the bypass either removed or one automatic trip channel placed in bypass and the other in trip within 1 hour. The restoration of one affected bypassed automatic trip channel must be completed prior to the next CHANNEL FUNCTIONAL TEST, or the plant must shut down per LCO 3.0.3 as explained in Condition B.

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.

#### E.1

Condition E applies if any CPC cabinet receives a high temperature alarm. There is one temperature sensor in each of the four CPC bays. Since CPC bays B and C also house CEAC calculators 1 and 2, respectively, a high temperature in either of these bays may also indicate a problem with the associated CEAC. CEAC OPERABILITY is addressed in LCO 3.3.3.

If a CPC cabinet high temperature alarm is received, it is possible for the CPC to be affected and not be completely reliable. Therefore, a CHANNEL FUNCTIONAL TEST must be

(continued)

## BASES

## ACTIONS

A.1. and A.2 (continued)

allows a two-out-of-three channel operation since no single failure will cause or prevent a reactor trip.

B.1

Condition B applies to the failure of two Logarithmic Power Level--High trip channels or associated instrument channels. Required Action B.1 provides for placing one inoperable channel in bypass and the other channel in trip within the Completion Time of 1 hour. This Completion Time is sufficient to allow the operator to take all appropriate actions for the failed channels and still ensures the risk involved in operating with the failed channels is acceptable. With one channel of protective instrumentation bypassed, the RPS is in a two-out-of-three logic; but with another channel failed, the RPS may be operating in a two-out-of-two logic. This is outside the assumptions made in the analyses and should be corrected. To correct the problem, the second channel is placed in trip. This places the RPS in a one-out-of-two logic. If any of the other OPERABLE channels receives a trip signal, the reactor will trip.

One of the two inoperable channels will need to be restored to OPERABLE status prior to the next required CHANNEL FUNCTIONAL TEST because channel surveillance testing on an OPERABLE channel requires that the OPERABLE channel be placed in bypass. However, it is not possible to bypass more than one RPS channel, and placing a second channel in trip will result in a reactor trip. Therefore, if one RPS channel is in trip and a second channel is in bypass, a third inoperable channel would place the unit in LCO 3.0.3.

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.

(continued)

## BASES

ACTIONS  
(continued)C.1, C.2.1, and C.2.2

Condition C applies to one automatic bypass removal channel inoperable. If the bypass removal channel for the high logarithmic power level operating bypass cannot be restored to OPERABLE status within 1 hour, the associated RPS channel may be considered OPERABLE only if the bypass is not in effect. Otherwise, the affected RPS channel must be declared inoperable, as in Condition A, and the bypass either removed or the affected automatic channel placed in trip or bypass. Both the bypass removal channel and the associated automatic trip channel must be repaired prior to entering MODE 2 following the next MODE 5 entry. The Bases for the Required Actions and required Completion Times are consistent with Condition A.

D.1 and D.2

Condition D applies to two inoperable automatic bypass removal channels. If the bypass removal channels for two operating bypasses cannot be restored to OPERABLE status within 1 hour, the associated RPS channel may be considered OPERABLE only if the bypass is not in effect. Otherwise, the affected RPS channels must be declared inoperable, as in Condition B, and the bypass either removed or one automatic trip channel placed in bypass and the other in trip within 1 hour. The restoration of one affected bypassed automatic trip channel must be completed prior to the next CHANNEL FUNCTIONAL TEST or the plant must shut down per LCO 3.0.3, as explained in Condition B. Completion Times are consistent with Condition B.

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.

(continued)

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BASES

ACTIONS

A.1 and A.2 (continued)

following the next MODE 5 entry is based on adequate channel to channel independence, which allows a two-out-of-three channel operation, since no single failure will cause or prevent a reactor trip.

B.1

The Required Action is modified by a Note stating that ICO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.

Condition B applies to the failure of two channels of one or more input parameters in the following ESFAS automatic trip Functions:

1. Safety Injection Actuation Signal  
Containment Pressure—High  
Pressurizer Pressure—Low
2. Containment Spray Actuation Signal  
Containment Pressure—High High  
Automatic SIAS
3. Containment Isolation Actuation Signal  
Containment Pressure—High  
Pressurizer Pressure—Low
4. Main Steam Isolation Signal  
Steam Generator Pressure—Low  
Containment Pressure—High
5. Recirculation Actuation Signal  
Refueling Water Storage Tank Level—Low
6. Emergency Feedwater Actuation Signal SG #1 (EFAS-1)  
Steam Generator Level—Low  
SG Pressure Difference—High  
Steam Generator Pressure—Low

(continued)

BASES

ACTIONS

C.1, C.2.1, and C.2.2 (continued)

Bases for the Required Actions and required Completion Times are consistent with Condition A.

D.1 and D.2

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.

Condition D applies to two inoperable automatic bypass removal channels. If the bypass removal channels for two operating bypasses cannot be restored to OPERABLE status, the associated ESFAS channel may be considered OPERABLE only if the bypass is not in effect. Otherwise, the affected ESFAS channels must be declared inoperable, as in Condition B, and either the bypass removed or the bypass removal channel repaired. The restoration of one affected bypassed automatic trip channel must be completed prior to the next CHANNEL FUNCTIONAL TEST or the plant must shut down per LCO 3.0.3, as explained in Condition B. Completion Times are consistent with Condition B.

E.1 and E.2

If the Required Actions and associated Completion Times of Condition A, B, C, or D cannot be met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within [12] hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

(continued)

## BASES

## ACTIONS

A.1 and A.2 (continued)

operation since no single failure will cause or prevent a reactor trip.

B.1 and B.2

Condition B applies if two channels are inoperable for one or more Functions.

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two Logic, which is adequate to ensure that no random failure will prevent protection system operation.

If the channel cannot be placed in bypass or trip within 1 hour, the Conditions and Required Actions for the associated DG made inoperable by DG-LOVS instrumentation are required to be entered. Alternatively, one affected channel is required to be bypassed and the other is tripped, in accordance with Required Action B.2. This places the Function in one-out-of-two logic. The 1 hour Completion Time is sufficient to perform the Required Actions.

One of the two inoperable channels will need to be restored to OPERABLE status prior to the next required CHANNEL FUNCTIONAL TEST because channel surveillance testing on an OPERABLE channel requires that the OPERABLE channel be placed in bypass. However, it is not possible to bypass more than one DG-LOVS channel, and placing a second channel in trip will result in a loss of voltage diesel start signal. Therefore, if one DG-LOVS channel is in trip and a second channel is in bypass, a third inoperable channel would place the unit in LCO 3.0.3.

After one channel is restored to OPERABLE status, the provisions of Condition A still apply to the remaining inoperable channel.

(continued)

BASES

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LCO position indication for valves in this state is not  
(continued) required to be OPERABLE.

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APPLICABILITY The PAM instrumentation LCO is applicable in MODES 1, 2, and 3. These variables are related to the diagnosis and preplanned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1, 2, and 3. In MODES 4, 5, and 6, plant conditions are such that the likelihood of an event occurring that would require PAM instrumentation is low; therefore, PAM instrumentation is not required to be OPERABLE in these MODES.

---

ACTIONS

Note 1 has been added in the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the ACTIONS, even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to monitor an accident using alternate instruments and methods, and the low probability of an event requiring these instruments.

- (A) → Note 2 has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.11-1. The Completion Time(s) of the inoperable channel(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

A.1

When one or more Functions have one required channel that is inoperable, the required inoperable channel must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channel (or in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive nature of the instrument (no critical automatic action is

(continued)

BASES

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LCO  
(continued)

sources. In these cases, the Remote Shutdown System is OPERABLE as long as one channel of any of the alternate information or control sources for each Function is OPERABLE.

The Remote Shutdown System instrumentation and control circuits covered by this LCO do not need to be energized to be considered OPERABLE. This LCO is intended to ensure that the instrument and control circuits will be OPERABLE if plant conditions require that the Remote Shutdown System be placed in operation.

---

## APPLICABILITY

The Remote Shutdown System LCO is applicable in MODES 1, 2, and 3. This is required so that the unit can be placed and maintained in MODE 3 for an extended period of time from a location other than the control room.

This LCO is not applicable in MODE 4, 5, or 6. In these MODES, the unit is already subcritical and in the condition of reduced RCS energy. Under these conditions, considerable time is available to restore necessary instrument control Functions if control room instruments or control become unavailable.

---

## ACTIONS

A Note has been included that excludes the MODE change restrictions of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS, even though the ACTIONS may eventually require a plant shutdown. This is acceptable due to the low probability of an event requiring this system.

A Remote Shutdown System division is inoperable when each Function listed in Table 3.3.12-1 is not accomplished by at least one designated Remote Shutdown System channel that satisfies the OPERABILITY criteria for the channel's Function. These criteria are outlined in the LCO section of the Bases.

(A) Note D has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.12-1. The Completion Time(s)

(continued)



## BASES

APPLICABILITY (continued) MODES 4, 5, and 6 with the reactor vessel head in place. LCO 3.4.12 addresses the PORV requirements in these MODES.

## ACTIONS

A.1

The ACTIONS are modified by ~~two~~ <sup>①</sup> Notes. Note ① clarifies that all pressurizer PORVs are treated as separate entities, each with separate Completion Times (i.e., the Completion Time is on a component basis). Note ② is an exception to LCO 3.0.4. <sup>The</sup> The exception for LCO 3.0.4 permits entry into MODES 1, 2, and 3 to perform cycling of the PORV or block valve to verify their OPERABLE status. Testing is typically not performed in lower MODES.

With the PORV inoperable and capable of being manually cycled, either the PORV must be restored or the flow path isolated within 1 hour. The block valve should be closed but power must be maintained to the associated block valve, since removal of power would render the block valve inoperable. Although the PORV may be designated inoperable, it may be able to be manually opened and closed and in this manner can be used to perform its function. PORV inoperability may be due to seat leakage, instrumentation problems, automatic control problems, or other causes that do not prevent manual use and do not create a possibility for a small break LOCA. For these reasons, the block valve may be closed but the Action requires power be maintained to the valve. This Condition is only intended to permit operation of the plant for a limited period of time not to exceed the next refueling outage (MODE 6) so that maintenance can be performed on the PORVs to eliminate the problem condition. The PORVs should normally be available for automatic mitigation of overpressure events and should be returned to OPERABLE status prior to entering startup (MODE 2).

Quick access to the PORV for pressure control can be made when power remains on the closed block valve. The Completion Time of 1 hour is based on plant operating experience that minor problems can be corrected or closure can be accomplished in this time period.

(continued)

## BASES

## ACTIONS

A.1 and A.2 (continued)

at an increased frequency of 24 hours to provide information that is adequate to detect leakage.

Restoration of the sump monitor to OPERABLE status is required to regain the function in a Completion Time of 30 days after the monitor's failure. This time is acceptable considering the frequency and adequacy of the RCS water inventory balance required by Required Action A.1.

~~Required Action A.1 and Required Action A.2 are modified by a Note that indicates the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when the containment sump monitor channel is inoperable. This allowance is provided because other instrumentation is available to monitor for RCS LEAKAGE.~~

B.1.1, B.1.2, B.2.1, and B.2.2

With both gaseous and particulate containment atmosphere radioactivity monitoring instrumentation channels inoperable, alternative action is required. Either grab samples of the containment atmosphere must be taken and analyzed, or water inventory balances, in accordance with SR 3.4.13.1, must be performed to provide alternate periodic information. With a sample obtained and analyzed or an inventory balance performed every 24 hours, the reactor may be operated for up to 30 days to allow restoration of at least one of the radioactivity monitors.

Alternatively, continued operation is allowed if the air cooler condensate flow rate monitoring system is OPERABLE, provided grab samples are taken every 24 hours.

The 24 hour interval provides periodic information that is adequate to detect leakage. The 30 day Completion Time recognizes at least one other form of leakage detection is available.

~~Required Actions B.1.1, B.1.2, B.2.1, and B.2.2 are modified by a Note that indicates that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when the gaseous and particulate containment atmosphere radioactivity monitor channel is inoperable. This allowance~~

(continued)

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BASES

ACTIONS

B.1.1, B.1.2, B.2.1, and B.2.2 (continued)

is provided because other instrumentation is available to monitor for RCS LEAKAGE.

C.1 and C.2

If the required containment air cooler condensate flow rate monitor is inoperable, alternative action is again required. Either SR 3.4.15.1 must be performed, or water inventory balances, in accordance with SR 3.4.13.1, must be performed to provide alternate periodic information. Provided a CHANNEL CHECK is performed every 8 hours or an inventory balance is performed every 24 hours, reactor operation may continue while awaiting restoration of the containment air cooler condensate flow rate monitor to OPERABLE status.

The 24 hour interval provides periodic information that is adequate to detect RCS LEAKAGE.

D.1 and D.2

If the required containment atmosphere radioactivity monitor and the containment air cooler condensate flow rate monitor are inoperable, the only means of detecting leakage is the containment sump monitor. This Condition does not provide the required diverse means of leakage detection. The Required Action is to restore either of the inoperable monitors to OPERABLE status within 30 days to regain the intended leakage detection diversity. The 30 day Completion Times ensure that the plant will not be operated in a reduced configuration for a lengthy time period.

E.1 and E.2

If any Required Action of Condition A, B, [C], or [D] cannot be met within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full

(continued)

BASES

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LCO  
(continued)

The SGTR accident analysis (Ref. 2) shows that the 2 hour site boundary dose levels are within acceptable limits. Violation of the LCO may result in reactor coolant radioactivity levels that could, in the event of an SGTR, lead to site boundary doses that exceed the 10 CFR 100 dose guideline limits.

---

APPLICABILITY

In MODES 1 and 2, and in MODE 3 with RCS average temperature  $\geq 500^{\circ}\text{F}$ , operation within the LCO limits for DOSE EQUIVALENT I-131 and gross specific activity is necessary to contain the potential consequences of an SGTR to within the acceptable site boundary dose values.

For operation in MODE 3 with RCS average temperature  $< 500^{\circ}\text{F}$ , and in MODES 4 and 5, the release of radioactivity in the event of an SGTR is unlikely since the saturation pressure of the reactor coolant is below the lift pressure settings of the atmospheric dump valves and main steam safety valves.

---

ACTIONS

A Note to the ACTIONS excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE(S) while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the significant conservatism incorporated into the specific activity limit, the low probability of an event which is limiting due to exceeding this limit, and the ability to restore transient specific activity excursions while the plant remains at, or proceeds to power operation.

A.1 and A.2

With the DOSE EQUIVALENT I-131 greater than the LCO limit, samples at intervals of 4 hours must be taken to demonstrate the limits of Figure 3.4.16-1 are not exceeded. The Completion Time of 4 hours is required to obtain and analyze a sample.

Sampling must continue for trending. The DOSE EQUIVALENT I-131 must be restored to within limits within 48 hours.

(continued)

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BASES

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APPLICABILITY  
(continued)

In MODES 3 and 4, both the hydrogen production rate and the total hydrogen produced after a LOCA would be less than that calculated for the DBA LOCA. Also, because of the limited time in these MODES, the probability of an accident requiring the hydrogen recombiners is low. Therefore, the hydrogen recombiners are not required in MODE 3 or 4.

In MODES 5 and 6, the probability and consequences of a LOCA are low, due to the pressure and temperature limitations. Therefore, hydrogen recombiners are not required in these MODES.

---

ACTIONS

A.1

With one containment hydrogen recombiner inoperable, the inoperable recombiner must be restored to OPERABLE status within 30 days. In this condition, the remaining OPERABLE hydrogen recombiner is adequate to perform the hydrogen control function. The 30 day Completion Time is based on the availability of the other hydrogen recombiner, the small probability of a LOCA or MSLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or MSLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.

~~Required Action A.1 has been modified by a Note stating that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one hydrogen recombiner is inoperable. This allowance is based on the availability of the other hydrogen recombiner, the small probability of a LOCA or MSLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or MSLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.~~

B.1 and B.2

Reviewer's Note: This Condition is only allowed for units with an alternate hydrogen control system acceptable to the technical staff.

(continued)

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## BASES

APPLICABILITY  
(continued)

In MODE 3 or 4, both the hydrogen production rate and the total hydrogen produced after a LOCA would be less than that calculated for the DBA LOCA. Also, because of the limited time in these MODES, the probability of an accident requiring the HMS is low. Therefore, the HMS is not required in MODE 3 or 4.

In MODES 5 and 6, the probability and consequences of a LOCA or main steam line break are low due to the pressure and temperature limitations of these MODES. Therefore, the HMS is not required in these MODES.

## ACTIONS

A.1

With one HMS train inoperable, the inoperable train must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on the availability of the other HMS train, the small probability of a LOCA or SLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), the amount of time available after a LOCA or SLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit, and the availability of the hydrogen recombiners, Containment Spray System, Hydrogen Purge System, and hydrogen monitors.

Required Action A.1 has been modified by a Note that states the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one HMS train is inoperable. This allowance is based on the availability of the other HMS train, the small probability of a LOCA or SLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or SLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.

B.1 and B.2

Reviewer's Note: This Condition is only allowed for units with an alternate hydrogen control system acceptable to the technical staff.

(continued)

## BASES

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LCO  
(continued)      in which the condenser is unavailable for use with the Steam Bypass System.

An ADV is considered OPERABLE when it is capable of providing a controlled relief of the main steam flow, and is capable of fully opening and closing on demand.

---

APPLICABILITY      In MODES 1, 2, and 3, [and in MODE 4, when steam generator is being relied upon for heat removal,] the ADVs are required to be OPERABLE.

In MODES 5 and 6, an SGTR is not a credible event.

---

## ACTIONS

### A.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.4 does not apply.

With one required ADV line inoperable, action must be taken to restore the OPERABLE status within 7 days. The 7 day Completion Time takes into account the redundant capability afforded by the remaining OPERABLE ADV lines, and a nonsafety grade backup in the Steam Bypass System and MSSVs.

### B.1

With [two] or more [required] ADV lines inoperable, action must be taken to restore [one] of the ADV lines to OPERABLE status. As the block valve can be closed to isolate an ADV, some repairs may be possible with the unit at power. The 24 hour Completion Time is reasonable to repair inoperable ADV lines, based on the availability of the Steam Bypass System and MSSVs, and the low probability of an event occurring during this period that requires the ADV lines.

### C.1 and C.2

If the ADV lines cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To

(continued)

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

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

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

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

---

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 2 within 7 hours;
- b. MODE 3 within 13 hours; and
- c. MODE 4 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, and 3.

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LCO 3.0.4

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

Insert 1

(continued)



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3.0 LCO APPLICABILITY

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LCO 3.0.4  
(continued)

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. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.

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

Reviewer's Note: LCO 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, LCO 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, and 3. The MODE change restrictions in LCO 3.0.4 were previously applicable in all MODES. Before this version of LCO 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

## 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 testing required to demonstrate OPERABILITY.

(continued)

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### 3.0 SR APPLICABILITY

SR 3.0.3 declared not met, and the applicable Condition(s) must be entered.  
(continued)

SR 3.0.4

Entry into a MODE or other <sup>only</sup>specified condition in the <sup>when</sup>Applicability of an LCO shall ~~not~~ be made ~~unless~~ the LCO's Surveillances have been met within their specified frequency. <sup>Insert 2</sup> This provision shall not prevent entry into 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.

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

Reviewer's Note: SR 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, SR 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, and 3. The MODE change restrictions in SR 3.0.4 were previously applicable in all MODES. Before this version of SR 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

### 3.3 INSTRUMENTATION

#### 3.3.3.1 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3.1 The PAM instrumentation for each Function in Table 3.3.3.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

#### NOTES

1. LCO 3.0.4 is not applicable.

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.8.	Immediately
C. -----NOTE----- Not applicable to [hydrogen monitor] channels.  One or more Functions with two required channels inoperable.	C.1 Restore one required channel to OPERABLE status.	7 days

(continued)

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### 3.3 INSTRUMENTATION

#### 3.3.3.2 Remote Shutdown System

LCD 3.3.3.2 The Remote Shutdown System Functions in Table 3.3.3.2-1 shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

#### NOTES

1. ~~LCD 3.0.4 is not applicable.~~

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.3.2.1 Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days

(continued)

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### 3.3 INSTRUMENTATION

#### 3.3.6.3 Low-Low Set (LLS) Instrumentation

LCO 3.3.6.3 The LLS valve instrumentation for each Function in Table 3.3.6.3-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One LLS valve inoperable due to inoperable channel(s).	A.1 Restore channel(s) to OPERABLE status.	24 hours
B. One or more safety/relief valves (S/RVs) with one Function 3 channel inoperable.	B.1 <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block; text-align: center;"> <del>NOTE</del>  LCO 3.0.4 is not applicable. </div> Restore tailpipe pressure switches to OPERABLE status.	Prior to entering MODE 2 or 3 from MODE 4
C. <del>NOTE</del> Separate Condition entry is allowed for each S/RV.  One or more S/RVs with two Function 3 channels inoperable.	C.1 Restore one tailpipe pressure switch to OPERABLE status.	[14] days

(continued)

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### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.6 RCS Leakage Detection Instrumentation

LCO 3.4.6 The following RCS leakage detection instrumentation shall be OPERABLE:

- a. Drywell floor drain sump monitoring system; [and]
- b. One channel of either primary containment atmospheric particulate or atmospheric gaseous monitoring system; [and]
- c. Primary containment air cooler condensate flow rate monitoring system].

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Drywell floor drain sump monitoring system inoperable.	<div style="border: 1px solid black; border-radius: 15px; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><del>NOTE</del> <del>LCO 3.4.6 is not applicable.</del></p> </div> <p>A.1 Restore drywell floor drain sump monitoring system to OPERABLE status.</p>	30 days

(continued)

## ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required primary containment atmospheric monitoring system inoperable.	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">-----NOTE-----  LCO 3.0.4 is not applicable.</p> </div> <p>B.1 Analyze grab samples of primary containment atmosphere.</p>	Once per 12 hours
	<p><u>AND</u></p> <p>B.2 Restore required primary containment atmospheric monitoring system to OPERABLE status.</p>	30 days
C. Primary containment air cooler condensate flow rate monitoring system inoperable.	<p>C.1 -----NOTE-----  Not applicable when required primary containment atmospheric monitoring system is inoperable.</p> <p>Perform SR 3.4.6.1.</p>	Once per 8 hours

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. Required primary containment atmospheric monitoring system inoperable.</p> <p><u>AND</u></p> <p>Primary containment air cooler condensate flow rate monitoring system inoperable.</p>	<p><del>NOTE</del> <del>LCO 3.0.4 is not applicable.</del></p> <p>D.1 Restore required primary containment atmospheric monitoring system to OPERABLE status.</p> <p><u>OR</u></p> <p>D.2 Restore primary containment air cooler condensate flow rate monitoring system to OPERABLE status.</p>	<p>30 days</p> <p>30 days</p>
<p>E. Required Action and associated Completion Time of Condition A, B, [C, or D] not met.</p>	<p>E.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>
<p>F. All required leakage detection systems inoperable.</p>	<p>F.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>



### 3.4.7 RCS Specific Activity

APPLICABILITY: MODE 1,  
MODES 2 and 3 with any main steam line not isolated.

ACTIONS		
CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Reactor coolant specific activity > [0.2] μCi/gm and ≤ 4.0 μCi/gm DOSE EQUIVALENT I-131.	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <del>NOTE LCO 3.0.4 is not applicable.</del> </div> A.1 Determine DOSE EQUIVALENT I-131.  <u>AND</u>	Once per 4 hours
	A.2 Restore DOSE EQUIVALENT I-131 to within limits.	48 hours
B. Required Action and associated Completion Time of Condition A not met.  <u>OR</u>  Reactor Coolant specific activity >[4.0] μCi/gm Dose EQUIVALENT I-131.	B.1 Determine DOSE EQUIVALENT I-131.  <u>AND</u>  B.2.1 Isolate all main steam lines.  <u>OR</u>	Once per 4 hours     12 hours

(continued)

## 3.4 REACTOR COOLANT SYSTEM (RCS)

## 3.4.8 Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown

LCO 3.4.8 Two RHR shutdown cooling subsystems shall be OPERABLE, and, with no recirculation pump in operation, at least one RHR shutdown cooling subsystem shall be in operation.

## NOTES

1. Both RHR shutdown cooling subsystems and recirculation pumps may be removed from operation for up to 2 hours per 8 hour period.
2. One RHR shutdown cooling subsystem may be inoperable for up to 2 hours for the performance of Surveillances.

APPLICABILITY: MODE 3, with reactor steam dome pressure < [the RHR cut in permissive pressure].

## ACTIONS

## NOTES

1. LCO 3.0.4 is not applicable.

2. Separate Condition entry is allowed for each RHR shutdown cooling subsystem.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two RHR shutdown cooling subsystems inoperable.	A.1 Initiate action to restore RHR shutdown cooling subsystem(s) to OPERABLE status.  <u>AND</u>	Immediately  (continued)

Primary Containment Hydrogen Recombiners  
3.6.3.1

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3.6 CONTAINMENT SYSTEMS

3.6.3.1 Primary Containment Hydrogen Recombiners (if permanently installed)

LCO 3.6.3.1 Two primary containment hydrogen recombiners shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One primary containment hydrogen recombiner inoperable.	<p>A.1</p> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; margin: 10px 0;"> <p style="text-align: center;"><del>NOTE</del></p> <p>LCO 3.6.4 is not applicable.</p> </div> <p>Restore primary containment hydrogen recombiner to OPERABLE status.</p>	30 days
B. Two primary containment hydrogen recombiners inoperable.	<p>B.1</p> <p>Verify by administrative means that the hydrogen control function is maintained.</p>	1 hour
	<p><u>AND</u></p> <p>B.2</p> <p>Restore one primary containment hydrogen recombiner to OPERABLE status.</p>	<p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>7 days</p>

(continued)

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### 3.6 CONTAINMENT SYSTEMS

#### 3.6.3.2 [Drywell Cooling System Fans]

LCD 3.6.3.2 Two [drywell cooling system fans] shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One [required] [drywell cooling system fan] inoperable.	<p>A.1</p> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;"> <p><del>NOTE</del> LCD 3.0.4 is not applicable.</p> </div> <p>Restore [required] [drywell cooling system fan] to OPERABLE status.</p>	30 days
B. Two [required] [drywell cooling system fans] inoperable.	<p>B.1 Verify by administrative means that the hydrogen control function is maintained.</p> <p><u>AND</u></p> <p>B.2 Restore one [required] [drywell cooling system fan] to OPERABLE status.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>7 days</p>
C. Required Action and Associated Completion Time not met.	C.1 Be in MODE 3.	12 hours

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### 3.6 CONTAINMENT SYSTEMS

#### 3.6.3.4 Containment Atmosphere Dilution (CAD) System

LCO 3.6.3.4 Two CAD subsystems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CAD subsystem inoperable.	<p>A.1 <span style="border: 1px solid black; padding: 5px; display: inline-block;"> <del>NOTE</del>  LCO 3.6.3.4 is not applicable. </span></p> <p>Restore CAD subsystem to OPERABLE status.</p>	30 days
B. Two CAD subsystems inoperable.	<p>B.1 Verify by administrative means that the hydrogen control function is maintained.</p> <p><u>AND</u></p> <p>B.2 Restore one CAD subsystem to OPERABLE status.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>7 days</p>
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours

### 3.7 PLANT SYSTEMS

#### 3.7.3 Diesel Generator (DG) [1B] Standby Service Water (SSW) System

LCO 3.7.3 The DG [1B] SSW System shall be OPERABLE.

APPLICABILITY: When DG [1B] is required to be OPERABLE.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DG [1B] SSW System inoperable.	<div style="border: 1px solid black; border-radius: 10px; padding: 5px; text-align: center;"> <del>NOTE</del>  <del>LCO 3.0.4 is not applicable.</del> </div>	
	A.1 Align cooling water to DG [1B] from a Unit [1] plant service water (PSW) subsystem.  <u>AND</u>	8 hours
	A.2 Verify cooling water is aligned to DG [1B] from a Unit [1] PSW subsystem.  <u>AND</u>	Once per 31 days
	A.3 Restore DG [1B] SSW System to OPERABLE status.	60 days
B. Required Action and Associated Completion Time not met.	B.1 Declare DG [1B] inoperable.	Immediately

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BASES

LCO 3.0.3  
(continued)

assemblies in the spent fuel storage pool." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.8 are not met while in MODE 1, 2, or 3, there is no safety benefit to be gained by placing the unit in a shutdown condition. The Required Action of LCO 3.7.8 of "Suspend movement of irradiated fuel assemblies in the spent fuel storage pool" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.

LCO 3.0.4

allows

LCO 3.0.4 establishes Limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It ~~precludes~~ placing the unit in a MODE or other specified condition stated in that Applicability (e.g., Applicability desired to be entered) when 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.

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.

- 17 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

(continued)

BASES

LCO 3.0.4  
(continued)

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 result from any unit shutdown.

Exceptions to LCO 3.0.4 are stated in the individual Specifications. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.

LCO 3.0.4 is only applicable when entering MODE 3 from MODE 4, MODE 2 from MODE 3 or 4, 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, or 3. The requirements of LCO 3.0.4 do not apply in MODES 4 and 5, or in other specified conditions of the Applicability (unless in MODE 1, 2, or 3) because the ACTIONS of individual specifications sufficiently define the remedial measures to be taken. [In some cases (e.g., ...) these ACTIONS provide a Note that states "While this LCO is not met, entry into a MODE or other specified condition in the Applicability is not permitted, unless required to comply with ACTIONS." This Note is a requirement explicitly precluding entry into a MODE or other specified condition of the Applicability.]

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, either in compliance with 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 those Surveillances that do not have to be performed 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.

LCO 3.0.5 LCO 3.0.5 establishes the allowance for 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

(continued)



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BASES

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SR 3.0.3  
(continued)

Required Actions for the applicable LCO Conditions begin immediately upon the failure of the Surveillance.

Completion of the Surveillance within the delay period allowed by this Specification, or within the Completion Time of the ACTIONS, restores compliance with SR 3.0.1.

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SR 3.0.4

SR 3.0.4 establishes the requirement that all applicable SRs must be met before entry into a MODE or other specified condition in the Applicability.

This Specification ensures that system and component OPERABILITY requirements and variable limits are met before entry into MODES or other specified conditions in the Applicability for which these systems and components ensure safe operation of the unit.

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.

Insert 4 →

However, in certain circumstances, failing to meet an SR will not result in SR 3.0.4 restricting a MODE change or other specified condition change. When a system, subsystem, division, component, device, or variable is inoperable or outside its specified limits, the associated SR(s) are not required to be performed per SR 3.0.1, which states that surveillances do not have to be performed on inoperable equipment. When equipment is inoperable, SR 3.0.4 does not apply to the associated SR(s) since the requirement for the SR(s) to be performed is removed. Therefore, failing to perform the Surveillance(s) within the specified Frequency does not result in an SR 3.0.4 restriction to changing MODES or other specified conditions of the Applicability. However, since the LCO is not met in this instance, LCO 3.0.4 will govern any restrictions that may (or may not) apply to MODE or other specified condition changes.

The provisions of SR 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

(continued)

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BASES

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LCO

13. Suppression Pool Water Temperature (continued)

suppression pool water temperature instrumentation allows operators to detect trends in suppression pool water temperature in sufficient time to take action to prevent steam quenching vibrations in the suppression pool. Twenty-four temperature sensors are arranged in six groups of four independent and redundant channels, located such that there is a group of sensors within a 30 ft line of sight of each relief valve discharge location.

Thus, six groups of sensors are sufficient to monitor each relief valve discharge location. Each group of four sensors includes two sensors for normal suppression pool temperature monitoring and two sensors for PAM. The outputs for the PAM sensors are recorded on four independent recorders in the control room (channels A and C are redundant to channels B and D, respectively). All four of these recorders must be OPERABLE to furnish two channels of PAM indication for each of the relief valve discharge locations. These recorders are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channels.

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APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1 and 2. These variables are related to the diagnosis and preplanned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1 and 2. In MODES 3, 4, and 5, plant conditions are such that the likelihood of an event that would require PAM instrumentation is extremely low; therefore, PAM instrumentation is not required to be OPERABLE in these MODES.

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ACTIONS

Note 1 has been added to the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to diagnose an accident using alternative instruments and methods, and the low probability of an event requiring these instruments.

(continued)

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BASES

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ACTIONS

(continued)

① Note ② has been provided to modify the ACTIONS related to PAM instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable PAM instrumentation channels provide appropriate compensatory measures for separate Functions. As such, a Note has been provided that allows separate Condition entry for each inoperable PAM Function.

A.1

When one or more Functions have one required channel that is inoperable, the required inoperable channel must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channels (or, in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

B.1

If a channel has not been restored to OPERABLE status in 30 days, this Required Action specifies initiation of action in accordance with Specification 5.6.8, which requires a written report to be submitted to the NRC. This report discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative actions. This action is appropriate in lieu of a shutdown requirement, since alternative actions are identified before loss of functional capability, and given the likelihood of plant conditions that would require information provided by this instrumentation.

(continued)

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BASES

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LCO  
(continued)

channel of any of the alternate information or control sources for each Function is OPERABLE.

The Remote Shutdown System instruments and control circuits covered by this LCO do not need to be energized to be considered OPERABLE. This LCO is intended to ensure that the instruments and control circuits will be OPERABLE if plant conditions require that the Remote Shutdown System be placed in operation.

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APPLICABILITY

The Remote Shutdown System LCO is applicable in MODES 1 and 2. This is required so that the plant can be placed and maintained in MODE 3 for an extended period of time from a location other than the control room.

This LCO is not applicable in MODES 3, 4, and 5. In these MODES, the plant is already subcritical and in a condition of reduced Reactor Coolant System energy. Under these conditions, considerable time is available to restore necessary instrument control Functions if control room instruments or control becomes unavailable. Consequently, the TS do not require OPERABILITY in MODES 3, 4, and 5.

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ACTIONS

A Note is included that excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require a plant shutdown. This exception is acceptable due to the low probability of an event requiring this system.

- (A) Note ② has been provided to modify the ACTIONS related to Remote Shutdown System Functions. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable Remote Shutdown System Functions provide appropriate compensatory measures for separate Functions.

(continued)

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BASES

ACTIONS

B.1 (continued)

logic (e.g., Logic A). Since each LLS logic normally receives at least five S/RV pressure switch inputs (and also receives the other S/RV signals from the other logic in the same division by an arming signal), the LLS logic and instrumentation remains capable of performing its safety function if any S/RV tailpipe pressure switch instrument channel becomes inoperable. Therefore, it is acceptable for plant operation to continue with only one tailpipe pressure switch OPERABLE on each S/RV. However, this is only acceptable provided each LLS valve is OPERABLE. (Refer to Required Action A.1 and D.1 Bases).

Required Action B.1 requires restoration of the tailpipe pressure switches to OPERABLE status prior to entering MODE 2 or 3 from MODE 4 to ensure that all switches are OPERABLE at the beginning of a reactor startup (this is because the switches are not accessible during plant operation). The Required Actions do not allow placing the channel in trip since this action could result in a LLS valve actuation. As noted, LCO 3.0.4 is not applicable, thus allowing entry into MODE 1 from MODE 2 with inoperable channels. This allowance is needed since the channels only have to be repaired prior to entering MODE 2 from MODE 3 or MODE 4. Yet, LCO 3.0.4 would preclude entry into MODE 1 from MODE 2 since the Required Action does not allow unlimited operations.

C.1

A failure of two pressure switch channels associated with one S/RV tailpipe could result in the loss of the LLS function (i.e., multiple actuations of the S/RV would go undetected by the LLS logic). However, the S/RVs are organized in groups and, during an event, groups of S/RVs initially open (setpoints are at same settings for a total of 11 S/RVs in three groups). Therefore, it would be very unlikely that a single S/RV would be required to arm all the LLS logic. Therefore, it is acceptable to allow 14 days to restore one pressure switch of the associated S/RV to OPERABLE status (Required Action C.1). However, this allowable out of service time is only acceptable provided each LLS is OPERABLE (Refer to Required Action A.1 and D.1 Bases). If one inoperable tailpipe pressure switch cannot

(continued)

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BASES

APPLICABLE  
SAFETY ANALYSES  
(continued)

RCS leakage detection instrumentation satisfies Criterion 1 of the NRC Policy Statement.

LCO

The drywell floor drain sump monitoring system is required to quantify the unidentified LEAKAGE from the RCS. Thus, for the system to be considered OPERABLE, either the flow monitoring or the sump level monitoring portion of the system must be OPERABLE. The other monitoring systems provide early alarms to the operators so closer examination of other detection systems will be made to determine the extent of any corrective action that may be required. With the leakage detection systems inoperable, monitoring for LEAKAGE in the RCPB is degraded.

APPLICABILITY

In MODES 1, 2, and 3, leakage detection systems are required to be OPERABLE to support LCO 3.4.4. This Applicability is consistent with that for LCO 3.4.4.

ACTIONS

A.1

With the drywell floor drain sump monitoring system inoperable, no other form of sampling can provide the equivalent information to quantify leakage. However, the primary containment atmospheric activity monitor [and the primary containment air cooler condensate flow rate monitor] will provide indication of changes in leakage.

With the drywell floor drain sump monitoring system inoperable, but with RCS unidentified and total LEAKAGE being determined every 8 hours (SR 3.4.4.1), operation may continue for 30 days. The 30 day Completion Time of Required Action A.1 is acceptable, based on operating experience, considering the multiple forms of leakage detection that are still available. Required Action A.1 is modified by a Note that states that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when the drywell floor drain sump monitoring system is inoperable. This allowance is provided because other instrumentation is available to monitor RCS leakage.

(continued)

## BASES

ACTIONS  
(continued)B.1 and B.2

With both gaseous and particulate primary containment atmospheric monitoring channels inoperable, grab samples of the primary containment atmosphere must be taken and analyzed to provide periodic leakage information. [Provided a sample is obtained and analyzed once every 12 hours, the plant may be operated for up to 30 days to allow restoration of at least one of the required monitors.] [Provided a sample is obtained and analyzed every 12 hours, the plant may continue operation since at least one other form of drywell leakage detection (i.e., air cooler condensate flow rate monitor) is available.]

The 12 hour interval provides periodic information that is adequate to detect LEAKAGE. The 30 day Completion Time for restoration recognizes that at least one other form of leakage detection is available.

The Required Actions are modified by a Note that states that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when both the gaseous and particulate primary containment atmospheric monitoring channels are inoperable. This allowance is provided because other instrumentation is available to monitor RCS leakage.

C.1

With the required primary containment air cooler condensate flow rate monitoring system inoperable, SR 3.4.6.1 must be performed every 8 hours to provide periodic information of activity in the primary containment at a more frequent interval than the routine Frequency of SR 3.4.7.1. The 8 hour interval provides periodic information that is adequate to detect LEAKAGE and recognizes that other forms of leakage detection are available. However, this Required Action is modified by a Note that allows this action to be not applicable if the required primary containment atmospheric monitoring system is inoperable. Consistent with SR 3.0.1, Surveillances are not required to be performed on inoperable equipment.

(continued)

BASES

ACTIONS  
(continued)

D.1 and D.2

With both the primary containment gaseous and particulate atmospheric monitor channels and the primary containment air cooler condensate flow rate monitor inoperable, the only means of detecting LEAKAGE is the drywell floor drain sump monitor. This condition does not provide the required diverse means of leakage detection. The Required Action is to restore either of the inoperable monitors to OPERABLE status within 30 days to regain the intended leakage detection diversity. The 30 day Completion Time ensures that the plant will not be operated in a degraded configuration for a lengthy time period.

The Required Actions are modified by a Note that states that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when both the gaseous and particulate primary containment atmospheric monitoring channels and air cooler condensate flow rate are inoperable. This allowance is provided because other instrumentation is available to monitor RCS leakage.

E.1 and E.2

If any Required Action of Condition A, B, [C, or D] cannot be met within the associated Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to perform the actions in an orderly manner and without challenging plant systems.

E.3

With all required monitors inoperable, no required automatic means of monitoring LEAKAGE are available, and immediate plant shutdown in accordance with LCO 3.0.3 is required.

(continued)



## BASES

### ACTIONS

#### A.1 and A.2 (continued)

Time of once every 4 hours is based on the time needed to take and analyze a sample. The 48 hour Completion Time to restore the activity level provides a reasonable time for temporary coolant activity increases (iodine spikes or crud bursts) to be cleaned up with the normal processing systems.

A Note to the Required Actions of Condition A excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE(S) while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the significant conservatism incorporated into the specific activity limit, the low probability of an event which is limiting due to exceeding this limit, and the ability to restore transient specific activity excursions while the plant remains at, or proceeds to power operation.

#### B.1, B.2.1, B.2.2.1, and B.2.2.2

If the DOSE EQUIVALENT I-131 cannot be restored to  $\leq 0.2$   $\mu\text{Ci/gm}$  within 48 hours, or if at any time it is  $> 4.0$   $\mu\text{Ci/gm}$ , it must be determined at least once every 4 hours and all the main steam lines must be isolated within 12 hours. Isolating the main steam lines precludes the possibility of releasing radioactive material to the environment in an amount that is more than a small fraction of the requirements of 10 CFR 100 during a postulated MSRB accident.

Alternatively, the plant can be placed in MODE 3 within 12 hours and in MODE 4 within 36 hours. This option is provided for those instances when isolation of main steam lines is not desired (e.g., due to the decay heat loads). In MODE 4, the requirements of the LCO are no longer applicable.

The Completion Time of once every 4 hours is the time needed to take and analyze a sample. The 12 hour Completion Time is reasonable, based on operating experience, to isolate the main steam lines in an orderly manner and without challenging plant systems. Also, the allowed Completion Times for Required Actions B.2.2.1 and B.2.2.2 for placing the unit in MODES 3 and 4 are reasonable, based on operating

(continued)

BASES

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APPLICABILITY  
(continued)

the steam in the main condenser. Additionally, in MODE 2 below this pressure, the OPERABILITY requirements for the Emergency Core Cooling Systems (ECCS) (LCO 3.5.1, "ECCS—Operating") do not allow placing the RHR shutdown cooling subsystem into operation.

The requirements for decay heat removal in MODES 4 and 5 are discussed in LCO 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown"; LCO 3.9.8, "Residual Heat Removal (RHR)—High Water Level"; and LCO 3.9.9, "Residual Heat Removal (RHR)—Low Water Level."

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ACTIONS

A Note to the ACTIONS excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE(S) while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the redundancy of the OPERABLE subsystems, the low pressure at which the plant is operating, the low probability of an event occurring during operation in this condition, and the availability of alternate methods of decay heat removal capability.

A second Note has been provided to modify the ACTIONS related to RHR shutdown cooling subsystems. Section 1.3, Completion Times, specifies once a Condition has been entered, subsequent divisions, subsystems, components or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable shutdown cooling subsystems provide appropriate compensatory measures for separate inoperable shutdown cooling subsystems. As such, a Note has been provided that allows separate Condition entry for each inoperable RHR shutdown cooling subsystem.

A.1, A.2, and A.3

With one required RHR shutdown cooling subsystem inoperable for decay heat removal, except as permitted by LCO Note 2, the inoperable subsystem must be restored to OPERABLE status

(continued)

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## BASES

## ACTIONS

A.1 (continued)

to prevent exceeding this limit, and the low probability of failure of the OPERABLE primary containment hydrogen recombiner.

Required Action A.1 has been modified by a Note indicating that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one recombiner is inoperable. This allowance is provided because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit, the low probability of the failure of the OPERABLE subsystem, and the amount of time available after a postulated LOCA for operator action to prevent exceeding the flammability limit.

B.1 and B.2

Reviewer's Note: This Condition is only allowed for units with an alternate hydrogen control system acceptable to the technical staff.

With two primary containment hydrogen recombiners inoperable, the ability to perform the hydrogen control function via alternate capabilities must be verified by administrative means within 1 hour. The alternate hydrogen control capabilities are provided by the [Primary Containment Inerting System or one subsystem of the Containment Atmosphere Dilution System]. The 1 hour Completion Time allows a reasonable period of time to verify that a loss of hydrogen control function does not exist. [Reviewer's Note: The following is to be used if a non-Technical Specification alternate hydrogen control function is used to justify this Condition. In addition, the alternate hydrogen control system capability must be verified once per 12 hours thereafter to ensure its continued availability.] [Both] the [initial] verification [and all subsequent verifications] may be performed as an administrative check by examining logs or other information to determine the availability of the alternate hydrogen control system. It does not mean to perform the Surveillances needed to demonstrate OPERABILITY of the alternate hydrogen control system. If the ability to perform the hydrogen control function is maintained,

(continued)

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## BASES

LCO  
(continued)

Operation with at least one fan provides the capability of controlling the bulk hydrogen concentration in primary containment without exceeding the flammability limit.

## APPLICABILITY

In MODES 1 and 2, the two [Drywell] Cooling System fans] ensure the capability to prevent localized hydrogen concentrations above the flammability limit of 4.0 v/o in drywell, assuming a worst case single active failure.

In MODE 3, both the hydrogen production rate and the total hydrogen produced after a LOCA would be less than that calculated for the DBA LOCA. Also, because of the limited time in this MODE, the probability of an accident requiring the [Drywell] Cooling System fans] is low. Therefore, the [Drywell] Cooling System fans] are not required in MODE 3.

In MODES 4 and 5, the probability and consequences of a LOCA are reduced due to the pressure and temperature limitations in these MODES. Therefore, the [Drywell] Cooling System fans] are not required in these MODES.

## ACTIONS

A.1

With one [required] [Drywell] Cooling System fan] inoperable, the inoperable fan must be restored to OPERABLE status within 30 days. In this Condition, the remaining OPERABLE fan is adequate to perform the hydrogen mixing function. However, the overall reliability is reduced because a single failure in the OPERABLE fan could result in reduced hydrogen mixing capability. The 30 day Completion Time is based on the availability of the second fan, the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit, the amount of time available after the event for operator action to prevent exceeding this limit, and the availability of the Primary Containment Hydrogen Recombiner System and the Containment Atmosphere Dilution System.

Required Action A.1 has been modified by a Note indicating that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one [Drywell] Cooling System fan] is inoperable. This allowance is provided

(continued)

## BASES

## ACTIONS

A.1 (continued)

because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit, the low probability of the failure of the OPERABLE fan, and the amount of time available after a postulated LOCA for operator action to prevent exceeding the flammability limit.

B.1 and B.2

Reviewer's Note: This Condition is only allowed for units with an alternate hydrogen control system acceptable to the technical staff.

With two [Drywell Cooling System fans] inoperable, the ability to perform the hydrogen control function via alternate capabilities must be verified by administrative means within 1 hour. The alternate hydrogen control capabilities are provided by the [Primary Containment Inerting System or one subsystem of the Containment Atmosphere Dilution System]. The 1 hour Completion Time allows a reasonable period of time to verify that a loss of hydrogen control function does not exist. [Reviewer's Note: The following is to be used if a non-Technical Specification alternate hydrogen control function is used to justify this Condition: In addition, the alternate hydrogen control system capability must be verified once per 12 hours thereafter to ensure its continued availability.] [Both] the [initial] verification [and all subsequent verifications] may be performed as an administrative check by examining logs or other information to determine the availability of the alternate hydrogen control system. It does not mean to perform the Surveillances needed to demonstrate OPERABILITY of the alternate hydrogen control system. If the ability to perform the hydrogen control function is maintained, continued operation is permitted with two [Drywell Cooling System fans] inoperable for up to 7 days. Seven days is a reasonable time to allow two [Drywell Cooling System fans] to be inoperable because the hydrogen control function is maintained and because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit.

(continued)

BASES (continued)

ACTIONS

A.1

If one CAD subsystem is inoperable, it must be restored to OPERABLE status within 30 days. In this Condition, the remaining OPERABLE CAD subsystem is adequate to perform the oxygen control function. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in reduced oxygen control capability. The 30 day Completion Time is based on the low probability of the occurrence of a LOCA that would generate hydrogen and oxygen in amounts capable of exceeding the flammability limit, the amount of time available after the event for operator action to prevent exceeding this limit, and the availability of the OPERABLE CAD subsystem and other hydrogen mitigating systems.

Required Action A.1 has been modified by a Note that indicates that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one CAD subsystem is inoperable. This allowance is provided because of the low probability of the occurrence of a LOCA that would generate hydrogen and oxygen in amounts capable of exceeding the flammability limit, the low probability of the failure of the OPERABLE subsystem, the amount of time available after a postulated LOCA for operator action to prevent exceeding the flammability limit, and the availability of other hydrogen mitigating systems.

B.1 and B.2

Reviewer's Note: This Condition is only allowed for plants with an alternate hydrogen control system acceptable to the technical staff.

With two CAD subsystems inoperable, the ability to perform the hydrogen control function via alternate capabilities must be verified by administrative means within 1 hour. The alternate hydrogen control capabilities are provided by the [Primary Containment Inerting System or one hydrogen recombiner and one Drywell Cooling System fan]. The 1 hour Completion Time allows a reasonable period of time to verify that a loss of hydrogen control function does not exist. [Reviewer's Note: The following is to be used if a non-Technical Specification alternate hydrogen control function is used to justify this Condition: In addition,

(continued)

## BASES (continued)

APPLICABILITY The requirements for OPERABILITY of the DG [1B] SSW System are governed by the required OPERABILITY of the DG [1B] (LCO 3.8.1, "AC Sources—Operating," and LCO 3.8.2, "AC Sources—Shutdown").

## ACTIONS

A.1, A.2, and A.3

The Required Actions are modified by a Note indicating that the LCO 3.0.4 does not apply. As a result, a MODE change is allowed when the DG [1B] SSW System is inoperable, provided the DG [1B] has an adequate cooling water supply from the Unit [1] PSW.

If the DG [1B] SSW System is inoperable, the OPERABILITY of the DG [1B] is affected due to loss of its cooling source; however, the capability exists to provide cooling to DG [1B] from the PSW System of Unit [1]. Continued operation is allowed for 60 days if the OPERABILITY of a Unit 1 PSW System, with respect to its capability to provide cooling to the DG [1B], can be verified. This is accomplished by aligning cooling water to DG [1B] from the Unit 1 PSW System within 8 hours and verifying this lineup once every 31 days. The 8 hour Completion Time is based on the time required to reasonably complete the Required Action, and the low probability of an event occurring requiring DG [1B] during this period. The 31 day verification of the Unit [1] PSW lineup to the DG [1B] is consistent with the PSW valve lineup SRs. The 60 day Completion Time to restore the DG [1B] SSW System to OPERABLE status allows sufficient time to repair the system, yet prevents indefinite operation with cooling water provided from the Unit [1] PSW System.

B.1

If cooling water cannot be made available to the DG [1B] within the 8 hour Completion Time, or if cooling water cannot be verified to be aligned to DG [1B] from a Unit [1] PSW subsystem as required by the 31 day verification Required Action, the DG [1B] cannot perform its intended function and must be immediately declared inoperable. In accordance with LCO 3.0.6, this also requires entering into the Applicable Conditions and Required Actions for LCO 3.8.1 or LCO 3.8.2. Additionally, if the DG [1B] SSW System is

(continued)

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

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

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

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

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

- a. MODE 2 within 7 hours;
- b. MODE 3 within 13 hours; and
- c. MODE 4 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, and 3.

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LCO 3.0.4

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

Insert 1

(continued)

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### 3.0 LCO APPLICABILITY

#### LCO 3.0.4 (continued)

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. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.

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

Reviewers's Note: LCO 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, LCO 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, and 3. The MODE change restrictions in LCO 3.0.4 were previously applicable in all MODES. Before this version of LCO 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

#### 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 testing required to demonstrate OPERABILITY.

(continued)

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### 3.0 SR APPLICABILITY

SR 3.0.3 (continued) declared not met, and the applicable Condition(s) must be entered.

SR 3.0.4 Entry into a MODE or other <sup>only</sup> specified condition in the <sup>when</sup> Applicability of an LCO shall ~~not~~ be made ~~unless~~ the LCO's Surveillances have been met within their specified Frequency. This provision shall not prevent entry into 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.

*Insert 2*

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

Reviewers's Note: SR 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, SR 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, and 3. The MODE change restrictions in SR 3.0.4 were previously applicable in all MODES. Before this version of SR 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

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### 3.3 INSTRUMENTATION

#### 3.3.3.1 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3.1 The PAM instrumentation for each Function in Table 3.3.3.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

#### NOTES

1. ~~LCO 3.0.4 is not applicable.~~

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.8.	Immediately
C. -----NOTE----- Not applicable to [hydrogen monitor] channels. ----- One or more Functions with two required channels inoperable.	C.1 Restore one required channel to OPERABLE status.	7 days

(continued)

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### 3.3 INSTRUMENTATION

#### 3.3.3.2 Remote Shutdown System

LC0 3.3.3.2 The Remote Shutdown System Functions in Table 3.3.3.2-1 shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

#### NOTES

1. ~~LC0 3.0.4 is not applicable.~~

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.3.2.1 Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days

(continued)

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### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.7 RCS Leakage Detection Instrumentation

LCO 3.4.7 The following RCS leakage detection instrumentation shall be OPERABLE:

- a. Drywell floor drain sump monitoring system; [and]
- b. One channel of either drywell atmospheric particulate or atmospheric gaseous monitoring system; [and]
- c. Drywell air cooler condensate flow rate monitoring system].

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Drywell floor drain sump monitoring system inoperable.	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><del>NOTE</del> <del>LCO 3.0.4 is not applicable.</del></p> </div> <p>A.1 Restore drywell floor drain sump monitoring system to OPERABLE status.</p>	30 days

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required drywell atmospheric monitoring system inoperable.	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><del>NOTE</del></p> <p>LCO 3.0.4 is not applicable.</p> </div> <p>B.1 Analyze grab samples of drywell atmosphere.</p>	Once per 12 hours
	<p><u>AND</u></p> <p>B.2 Restore required drywell atmospheric monitoring system to OPERABLE status.</p>	30 days
C. Drywell air cooler condensate flow rate monitoring system inoperable.	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><del>NOTE</del></p> <p>Not applicable when the required drywell atmospheric monitoring system is inoperable.</p> </div> <p>C.1 Perform SR 3.4.7.1.</p>	Once per 8 hours
D. Required drywell atmospheric monitoring system inoperable.	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><del>NOTE</del></p> <p>LCO 3.0.4 is not applicable.</p> </div> <p>D.1 Restore required drywell atmospheric monitoring system to OPERABLE status.</p>	30 days
<p><u>AND</u></p> <p>Drywell air cooler condensate flow rate monitoring system inoperable.</p>	<p><u>OR</u></p>	(continued)

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### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.8 RCS Specific Activity

**LCO 3.4.8** The specific activity of the reactor coolant shall be limited to DOSE EQUIVALENT I-131 specific activity  $\leq$  [0.2]  $\mu\text{Ci/gm}$ .

**APPLICABILITY:** MODE 1,  
MODES 2 and 3 with any main steam line not isolated.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. Reactor coolant specific activity <math>&gt;</math> [0.2] <math>\mu\text{Ci/gm}</math> and <math>\leq</math> 4.0 <math>\mu\text{Ci/gm}</math> DOSE EQUIVALENT I-131.</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><del>NOTE</del> LCO 3.0.4 is not applicable.</p> </div>	Once per 4 hours
	<p>A.1 Determine DOSE EQUIVALENT I-131.</p> <p><u>AND</u></p> <p>A.2 Restore DOSE EQUIVALENT I-131 to within limits.</p>	48 hours
<p>B. Required Action and associated Completion Time of Condition A not met.</p> <p><u>OR</u></p> <p>Reactor coolant specific activity <math>&gt;</math> [4.0] <math>\mu\text{Ci/gm}</math> DOSE EQUIVALENT I-131.</p>	<p>B.1 Determine DOSE EQUIVALENT I-131.</p> <p><u>AND</u></p> <p>B.2.1 Isolate all main steam lines.</p>	Once per 4 hours
	<p><u>OR</u></p>	12 hours
		(continued)

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### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.9 Residual Heat Removal (RHR) Shutdown Cooling System--Hot Shutdown

LCO 3.4.9 Two RHR shutdown cooling subsystems shall be OPERABLE, and, with no recirculation pump in operation, at least one RHR shutdown cooling subsystem shall be in operation.

##### NOTES

1. Both RHR shutdown cooling subsystems and recirculation pumps may be removed from operation for up to 2 hours per 8 hour period.
2. One RHR shutdown cooling subsystem may be inoperable for up to 2 hours for performance of Surveillances.

APPLICABILITY: MODE 3 with reactor steam dome pressure < [the RHR cut in permissive pressure].

##### ACTIONS

##### NOTES

1. LCO 3.0.4 is not applicable.

2. Separate Condition entry is allowed for each RHR shutdown cooling subsystem.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two RHR shutdown cooling subsystems inoperable.	A.1 Initiate action to restore RHR shutdown cooling subsystem to OPERABLE status.  <u>AND</u>	Immediately  (continued)



### 3.6 CONTAINMENT SYSTEMS

#### 3.6.3.1 Primary Containment Hydrogen Recombiners (if permanently installed)

LCO 3.6.3.1 Two primary containment hydrogen recombiners shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One primary containment hydrogen recombiner inoperable.	<p>A.1</p> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin: 10px 0;"> <p><del>NOTE</del> LCO 3.0.4 is not applicable.</p> </div> <p>Restore primary containment hydrogen recombiner to OPERABLE status.</p>	30 days
B. Two primary containment hydrogen recombiners inoperable.	<p>B.1</p> <p>Verify by administrative means that the hydrogen control function is maintained.</p>	1 hour
	<p><u>AND</u></p> <p>B.2</p> <p>Restore one primary containment hydrogen recombiner to OPERABLE status.</p>	<p><u>AND</u></p> <p>One per 12 hours thereafter</p> <p>7 days</p>

(continued)

Primary Containment and Drywell Hydrogen Ignitors  
3.6.3.2

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3.6 CONTAINMENT SYSTEMS

3.6.3.2 Primary Containment and Drywell Hydrogen Ignitors

LCO 3.6.3.2 Two divisions of primary containment and drywell hydrogen ignitors shall be OPERABLE, each with > 90% of the associated ignitor assemblies OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One primary containment and drywell hydrogen ignitor division inoperable.	<p>A.1</p> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">NOTE</p> <p>LCO 3.0.4 is not applicable.</p> </div> <p>Restore primary containment and drywell hydrogen ignitor division to OPERABLE status.</p>	30 days
B. Two primary containment and drywell hydrogen ignitor divisions inoperable.	<p>B.1</p> <p>Verify by administrative means that the hydrogen control function is maintained.</p> <p><u>AND</u></p> <p>B.2</p> <p>Restore one primary containment and drywell hydrogen ignitor division to OPERABLE status.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>7 days</p>

(continued)

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### 3.6 CONTAINMENT SYSTEMS

#### 3.6.3.3 [Drywell Purge System]

LCO 3.6.3.3 Two [drywell purge] subsystems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One [drywell purge] subsystem inoperable.	<p>A.1</p> <div style="border: 1px dashed black; padding: 5px; margin: 10px auto; width: fit-content;"> <p><del>NOTE</del> LCO 3.0.4 is not applicable.</p> </div> <p>Restore [drywell purge] subsystem to OPERABLE status.</p>	30 days
B. Two [drywell purge] subsystems inoperable.	<p>B.1 Verify by administrative means that the hydrogen control function is maintained.</p> <p><u>AND</u></p> <p>B.2 Restore one [drywell purge] subsystem to OPERABLE status.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>7 days</p>
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours

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BASES

LCO 3.0.3  
(continued)

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

LCO 3.0.4

allows

LCO 3.0.4 establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It ~~precludes~~ placing the unit in a MODE or other specified condition stated in that Applicability (e.g., Applicability desired to be entered) when 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.

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.

P The provisions of this Specification should not be

Insert 3  
(continued)

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BASES

LCO 3.0.4  
(continued)

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 result from any unit shutdown.

Exceptions to LCO 3.0.4 are stated in the individual Specifications. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.

LCO 3.0.4 is only applicable when entering MODE 3 from MODE 4, MODE 2 from MODE 3 or 4, 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, or 3. The requirements of LCO 3.0.4 do not apply in MODES 4 and 5, or in other specified conditions of the Applicability (unless in MODE 1, 2, or 3) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken. [In some cases (e.g., ...) these ACTIONS provide a Note that states "While this LCO is not met, entry into a MODE or other specified condition in the Applicability is not permitted, unless required to comply with ACTIONS." This Note is a requirement explicitly precluding entry into a MODE or other specified condition of the Applicability.]

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, either in compliance with 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 those Surveillances that do not have to be performed 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.

(continued)

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BASES

SR 3.0.3  
(continued)

Completion of the Surveillance within the delay period allowed by this Specification, or within the Completion Time of the ACTIONS, restores compliance with SR 3.0.1.

SR 3.0.4

SR 3.0.4 establishes the requirement that all applicable SRs must be met before entry into a MODE or other specified condition in the Applicability.

This Specification ensures that system and component OPERABILITY requirements and variable limits are met before entry into MODES or other specified conditions in the Applicability for which these systems and components ensure safe operation of the unit.

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.

Insert 4

However, in certain circumstances, failing to meet an SR will not result in SR 3.0.4 restricting a MODE change or other specified condition change. When a system, subsystem, division, component, device, or variable is inoperable or outside its specified limits, the associated SR(s) are not required to be performed per SR 3.0.1 which states that surveillances do not have to be performed on inoperable equipment. When equipment is inoperable, SR 3.0.4 does not apply to the associated SR(s) since the requirement for the SR(s) to be performed is removed. Therefore, failing to perform the Surveillance(s) within the specified Frequency does not result in an SR 3.0.4 restriction to changing MODES or other specified conditions of the Applicability. However, since the LCO is not met in this instance, LCO 3.0.4 will govern any restrictions that may (or may not) apply to MODE or other specified condition changes.

The provisions of SR 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 result from any unit shutdown.

(continued)

BASES (continued)

ACTIONS

Note 1 has been added to the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the Actions even though the Actions may eventually require plant shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to diagnose an accident using alternate instruments and methods, and the low probability of an event requiring these instruments.

A Note has also been provided to modify the ACTIONS related to PAM instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable PAM instrumentation channels provide appropriate compensatory measures for separate inoperable functions. As such, a Note has been provided that allows separate Condition entry for each inoperable PAM Function.

A.1

When one or more Functions have one required channel that is inoperable, the required inoperable channel must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channel (or in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

B.1

If a channel has not been restored to OPERABLE status in 30 days, this Required Action specifies initiation of actions in accordance with Specification 5.6.8, which

(continued)

## BASES

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### LCO (continued)

channel of any of the alternate information or control sources for each Function is OPERABLE.

The Remote Shutdown System instruments and control circuits covered by this LCO do not need to be energized to be considered OPERABLE. This LCO is intended to ensure that the instruments and control circuits will be OPERABLE if plant conditions require that the Remote Shutdown System be placed in operation.

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### APPLICABILITY

The Remote Shutdown System LCO is applicable in MODES 1 and 2. This is required so that the plant can be placed and maintained in MODE 3 for an extended period of time from a location other than the control room.

This LCO is not applicable in MODES 3, 4, and 5. In these MODES, the plant is already subcritical and in a condition of reduced Reactor Coolant System energy. Under these conditions, considerable time is available to restore necessary instrument control Functions if control room instruments or control becomes unavailable. Consequently, the TS do not require OPERABILITY in MODES 3, 4, and 5.

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### ACTIONS

A Note is included that excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require a plant shutdown. This exception is acceptable due to the low probability of an event requiring this system.

A Note has been provided to modify the ACTIONS related to Remote Shutdown System Functions. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable Remote Shutdown System Functions provide appropriate compensatory measures for separate Functions.

(continued)

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## BASES

APPLICABLE  
SAFETY ANALYSES  
(continued)

Therefore, these actions provide adequate response before a significant break in the RCPB can occur.

RCS leakage detection instrumentation satisfies Criterion 1 of the NRC Policy Statement.

## LCO

The drywell floor drain sump monitoring system is required to quantify the unidentified LEAKAGE from the RCS. Thus, for the system to be considered OPERABLE, either the flow monitoring or the sump level monitoring portion of the system must be OPERABLE. The other monitoring systems provide early alarms to the operators so closer examination of other detection systems will be made to determine the extent of any corrective action that may be required. With the leakage detection systems inoperable, monitoring for LEAKAGE in the RCPB is degraded.

## APPLICABILITY

In MODES 1, 2, and 3, leakage detection systems are required to be OPERABLE to support LCO 3.4.5. This Applicability is consistent with that for LCO 3.4.5.

## ACTIONS

A.1

With the drywell floor drain sump monitoring system inoperable, no other form of sampling can provide the equivalent information to quantify leakage. However, the drywell atmospheric activity monitor [and the drywell air cooler condensate flow rate monitor] will provide indications of changes in leakage.

With the drywell floor drain sump monitoring system inoperable, but with RCS unidentified and total LEAKAGE being determined every 8 hours (SR 3.4.5.1), operation may continue for 30 days. The 30 day Completion Time of Required Action A.1 is acceptable, based on operating experience, considering the multiple forms of leakage detection that are still available. Required Action A.1 is modified by a Note that states that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when the drywell floor drain sump monitoring system

(continued)

BASES

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ACTIONS

A.1 (continued)

~~is inoperable. This allowance is provided because other instrumentation is available to monitor RCS leakage.~~

B.1 and B.2

With both gaseous and particulate drywell atmospheric monitoring channels inoperable, grab samples of the drywell atmosphere shall be taken and analyzed to provide periodic leakage information. [Provided a sample is obtained and analyzed every 12 hours, the plant may be operated for up to 30 days to allow restoration of at least one of the required monitors.] [Provided a sample is obtained and analyzed every 12 hours, the plant may continue operation since at least one other form of drywell leakage detection (i.e., air cooler condensate flow rate monitor) is available.]

The 12 hour interval provides periodic information that is adequate to detect LEAKAGE. The 30 day Completion Time for restoration recognizes that at least one other form of leakage detection is available.

~~The Required Actions are modified by a Note that states that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when both the gaseous and particulate primary containment atmospheric monitoring channels are inoperable. This allowance is provided because other instrumentation is available to monitor RCS leakage.~~

C.1

With the required drywell air cooler condensate flow rate monitoring system inoperable, SR 3.4.7.1 is performed every 8 hours to provide periodic information of activity in the drywell at a more frequent interval than the routine Frequency of SR 3.4.7.1. The 8 hour interval provides periodic information that is adequate to detect LEAKAGE and recognizes that other forms of leakage detection are available. However, this Required Action is modified by a Note that allows this action to be not applicable if the required drywell atmospheric monitoring system is inoperable. Consistent with SR 3.0.1, Surveillances are not required to be performed on inoperable equipment.

(continued)

## BASES

ACTIONS  
(continued)D.1 and D.2

With both the gaseous and particulate drywell atmospheric monitor channels and the drywell air cooler condensate flow rate monitor inoperable, the only means of detecting LEAKAGE is the drywell floor drain sump monitor. This Condition does not provide the required diverse means of leakage detection. The Required Action is to restore either of the inoperable monitors to OPERABLE status within 30 days to regain the intended leakage detection diversity. The 30 day Completion Time ensures that the plant will not be operated in a degraded configuration for a lengthy time period. The Required Actions are modified by a Note that states that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when both the gaseous and particulate primary containment atmospheric monitoring channels and air cooler condensate flow rate are inoperable. This allowance is provided because other instrumentation is available to monitor RCS leakage.

E.1 and E.2

If any Required Action of Condition A, B, [C, or D] cannot be met within the associated Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions in an orderly manner and without challenging plant systems.

F.1

With all required monitors inoperable, no required automatic means of monitoring LEAKAGE are available, and immediate plant shutdown in accordance with LCO 3.0.3 is required.

SURVEILLANCE  
REQUIREMENTSSR 3.4.7.1

This SR requires the performance of a CHANNEL CHECK of the required drywell atmospheric monitoring system. The check gives reasonable confidence that the channel is operating

(continued)

BASES

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APPLICABLE  
SAFETY ANALYSES  
(continued)

outside containment during steady state operation, will not exceed 10% of the dose guidelines of 10 CFR 100.

The limits on specific activity are values from a parametric evaluation of typical site locations. These limits are conservative because the evaluation considered more restrictive parameters than for a specific site, such as the location of the site boundary and the meteorological conditions of the site.

RCS specific activity satisfies Criterion 2 of the NRC Policy Statement.

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LCO

The specific iodine activity is limited to  $\leq [0.2] \mu\text{Ci/gm}$  DOSE EQUIVALENT I-131. This limit ensures the source term assumed in the safety analysis for the MSLB is not exceeded, so any release of radioactivity to the environment during an MSLB is less than a small fraction of the 10 CFR 100 limits.

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APPLICABILITY

In MODE 1, and MODES 2 and 3 with any main steam line not isolated, limits on the primary coolant radioactivity are applicable since there is an escape path for release of radioactive material from the primary coolant to the environment in the event of an MSLB outside of primary containment.

In MODES 2 and 3 with the main steam lines isolated, such limits do not apply since an escape path does not exist. In MODES 4 and 5, no limits are required since the reactor is not pressurized and the potential for leakage is reduced.

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ACTIONS

A note to the Required Action of Condition A excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE(S) while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the significant conservatism incorporated into the specific activity limit, the low probability of an event which is limiting due to exceeding this limit, and the ability to

(continued)

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BASES

ACTIONS  
(continued)

restore transient specific activity excursions while the plant remains at, or proceeds to power operation

A.1 and A.2

When the reactor coolant specific activity exceeds the LCO DOSE EQUIVALENT I-131 limit, but is  $\leq 4.0$   $\mu\text{Ci/gm}$ , samples must be analyzed for DOSE EQUIVALENT I-131 at least once every 4 hours. In addition, the specific activity must be restored to the LCO limit within 48 hours. The Completion Time of once every 4 hours is based on the time needed to take and analyze a sample. The 48 hour Completion Time to restore the activity level provides a reasonable time for temporary coolant activity increases (iodine spikes or crud bursts) to be cleaned up with the normal processing systems.

B.1, B.2.1, B.2.2.1, and B.2.2.2

If the DOSE EQUIVALENT I-131 cannot be restored to  $\leq [0.2]$   $\mu\text{Ci/gm}$  within 48 hours, or if at any time it is  $> [4.0]$   $\mu\text{Ci/gm}$ , it must be determined at least every 4 hours and all the main steam lines must be isolated within 12 hours. Isolating the main steam lines precludes the possibility of releasing radioactive material to the environment in an amount that is more than a small fraction of the requirements of 10 CFR 100 during a postulated MSLS accident.

Alternately, the plant can be brought to MODE 3 within 12 hours and to MODE 4 within 36 hours. This option is provided for those instances when isolation of main steam lines is not desired (e.g., due to the decay heat loads). In MODE 4, the requirements of the LCO are no longer applicable.

The Completion Time of once every 4 hours is the time needed to take and analyze a sample. The 12 hour Completion Time is reasonable, based on operating experience, to isolate the main steam lines in an orderly manner and without challenging plant systems. Also, the allowed Completion Times for Required Actions B.2.2.1 and B.2.2.2 for bringing the plant to MODES 3 and 4 are reasonable, based on

(continued)

BASES

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APPLICABILITY  
(continued)

"ECCS—Operating") do not allow placing the RHR shutdown cooling subsystem into operation.

The requirements for decay heat removal in MODES 4 and 5 are discussed in LCO 3.4.10, "Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown"; LCO 3.9.8, "Residual Heat Removal (RHR)—High Water Level"; and LCO 3.9.9, "Residual Heat Removal (RHR)—Low Water Level."

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ACTIONS

A Note to the ACTIONS excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE(S) while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the redundancy of the OPERABLE subsystems, the low pressure at which the plant is operating, the low probability of an event occurring during operation in this condition, and the availability of alternate methods of decay heat removal capability.

A second Note has been provided to modify the ACTIONS related to RHR shutdown cooling subsystems. Section 1.3, Completion Times, specifies once a Condition has been entered, subsequent divisions, subsystems, components or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable shutdown cooling subsystems provide appropriate compensatory measures for separate inoperable shutdown cooling subsystems. As such, a Note has been provided that allows separate Condition entry for each inoperable RHR shutdown cooling subsystem.

A.1, A.2, and A.3

With one required RHR shutdown cooling subsystem inoperable for decay heat removal, except as permitted by LCO Note 2, the inoperable subsystem must be restored to OPERABLE status without delay. In this condition, the remaining OPERABLE subsystem can provide the necessary decay heat removal. The overall reliability is reduced, however, because a single

(continued)

BASES (continued)

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APPLICABILITY

In MODES 1 and 2, the two primary containment hydrogen recombiners are required to control the hydrogen concentration within primary containment below its flammability limit of 4.0 v/o following a LOCA, assuming a worst case single failure.

In MODE 3, both the hydrogen production rate and the total hydrogen production after a LOCA would be less than that calculated for the DBA LOCA. Also, because of the limited time in this MODE, the probability of an accident requiring the primary containment hydrogen recombiner is low. Therefore, the primary containment hydrogen recombiner is not required in MODE 3.

In MODES 4 and 5, the probability and consequences of a LOCA are low due to the pressure and temperature limitations in these MODES. Therefore, the primary containment hydrogen recombiner is not required in these MODES.

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ACTIONS

A.1

With one primary containment hydrogen recombiner inoperable, the inoperable primary containment hydrogen recombiner must be restored to OPERABLE status within 30 days. In this Condition, the remaining OPERABLE primary containment recombiner is adequate to perform the hydrogen control function. However, the overall reliability is reduced because a single failure in the OPERABLE recombiner could result in reduced hydrogen control capability. The 30 day Completion Time is based on the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit, the amount of time available after the event for operator action to prevent hydrogen accumulation exceeding this limit, and the low probability of failure of the OPERABLE primary containment hydrogen recombiner.

Required Action A.1 has been modified by a Note stating that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one recombiner is inoperable. This allowance is provided because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability

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## BASES

## ACTIONS

A.1 (continued)

limit, the low probability of the failure of the OPERABLE recombining, and the amount of time available after a postulated LOCA for operator action to prevent exceeding the flammability limit.

B.1 and B.2

Reviewer's Note: This Condition is only allowed for units with an alternate hydrogen control system acceptable to the technical staff.

With two primary containment hydrogen recombiners inoperable, the ability to perform the hydrogen control function via alternate capabilities must be verified by administrative means within 1 hour. The alternate hydrogen control capabilities are provided by [one division of the hydrogen ignitors]. The 1 hour Completion Time allows a reasonable period of time to verify that a loss of hydrogen control function does not exist. [Reviewer's Note: The following is to be used if a non-Technical Specification alternate hydrogen control function is used to justify this Condition: In addition, the alternate hydrogen control system capability must be verified once per 12 hours thereafter to ensure its continued availability.] [Both] the [initial] verification [and all subsequent verifications] may be performed as an administrative check by examining logs or other information to determine the availability of the alternate hydrogen control system. It does not mean to perform the Surveillances needed to demonstrate OPERABILITY of the alternate hydrogen control system. If the ability to perform the hydrogen control function is maintained, continued operation is permitted with two hydrogen recombiners inoperable for up to 7 days. Seven days is a reasonable time to allow two hydrogen recombiners to be inoperable because the hydrogen control function is maintained and because of the low probability of the occurrence of a LOCA that would generate hydrogen in the amounts capable of exceeding the flammability limit.

(continued)



BASES

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ACTIONS

A.1 (continued)

75% of the core cladding, the amount of time available after the event for operator action to prevent hydrogen accumulation from exceeding the flammability limit, and the low probability of failure of the OPERABLE hydrogen ignitor division.

Required Action A.1 has been modified by a Note indicating the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one hydrogen ignitor division is inoperable or when one or more areas with adjacent igniters are inoperable. The allowance is provided because of the low probability of the occurrence of an event that would generate hydrogen in amounts capable of exceeding the flammability limit, the low probability of the failure of both hydrogen ignitor divisions or adjacent igniters, and the amount of time available after the event for operator action to prevent exceeding the flammability limit.

B.1 and B.2

With two primary containment and drywell ignitor divisions inoperable, the ability to perform the hydrogen control function via alternate capabilities must be verified by administrative means within 1 hour. The alternate hydrogen control capabilities are provided by one hydrogen recombiner and one drywell purge subsystem. The 1 hour Completion Time allows a reasonable period of time to verify that a loss of hydrogen control function does not exist. The verification may be performed as an administrative check by examining logs or other information to determine the availability of the alternate hydrogen control capabilities. It does not mean to perform the Surveillances needed to demonstrate OPERABILITY of the alternate hydrogen control capabilities. If the ability to perform the hydrogen control function is maintained, continued operation is permitted with two ignitor divisions inoperable for up to 7 days. Seven days is a reasonable time to allow two ignitor divisions to be inoperable because the hydrogen control function is maintained and because of the low probability of the occurrence of a LOCA that would generate hydrogen in the amounts capable of exceeding the flammability limit.

(continued)

## BASES (continued)

## APPLICABILITY

In MODES 1 and 2, the two [drywell purge] subsystems ensure the capability to prevent localized hydrogen concentrations above the flammability limit of 4.0 v/o in the drywell, assuming a worst case single active failure.

In MODE 3, both the hydrogen production rate and the total hydrogen produced after a LOCA would be less than that calculated for the DBA LOCA. Also, because of the limited time in this MODE, the probability of an accident requiring the [Drywell Purge System] is low. Therefore, the [Drywell Purge System] is not required in MODE 3.

In MODES 4 and 5, the probability and consequences of a LOCA are reduced due to the pressure and temperature limitations in these MODES. Therefore, the [Drywell Purge System] is not required in these MODES.

## ACTIONS

A.1

With one [drywell purge] subsystem inoperable, the inoperable subsystem must be restored to OPERABLE status within 30 days. In this Condition, the remaining OPERABLE subsystem is adequate to perform the drywell purge function. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in reduced drywell purge capability. The 30 day Completion Time is based on the availability of the second subsystem, the low probability of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit, and the amount of time available after the event for operator action to prevent hydrogen accumulation from exceeding this limit.

Required Action A.1 has been modified by a Note indicating the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one subsystem is inoperable. This allowance is provided because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit, the low probability of the failure of the OPERABLE subsystem, and the amount of time available after a postulated LOCA for operator action to prevent exceeding the flammability limit.

(continued)