TSTF
TECHNICAL SPECIFICATIONS TASK FORCE
A JOINT OWNERS GROUP ACTIVITY

November 22, 2011

TSTF-11-19
PROJ0753

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

SUBJECT: Transmittal of TSTF-426, Revision 5, "Revise or Add Actions to Preclude Entry into LCO 3.0.3 - RITSTF Initiatives 6b & 6c"

Enclosed for NRC review is Revision 5 of TSTF-426, "Revise or Add Actions to Preclude Entry into LCO 3.0.3 - RITSTF Initiatives 6b & 6c."

At the November 10, 2011 TSTF/NRC public meeting, the NRC requested that the TSTF revise the justification of TSTF-426, Revision 4, to eliminate a statement that one of the reasons for the proposed change is, "Providing for increased flexibility in scheduling and performing maintenance and surveillance activities." Earlier revisions to TSTF-426 incorporated Notes which prohibit voluntary entry into the loss-of-function Conditions. Therefore, this statement is no longer accurate. The TSTF removed the statement in Revision 5. No other revisions are made.

Revisions 0 through 4 of TSTF-426 were not assessed NRC review fees. We request that NRC review of the Revision 4 of TSTF-426 also be granted a fee waiver pursuant to the provisions of 10 CFR 170.11. Specifically, the request is to support NRC generic regulatory improvements (risk managed technical specifications), in accordance with 10 CFR 170.11(a)(1)(iii). This request is consistent with the NRC letter to A. R. Pietrangelo on this subject dated January 10, 2003.

Should you have any questions, please do not hesitate to contact us.

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Enclosure

cc: Robert Elliott, Technical Specifications Branch, NRC
Michelle Honcharik, Licensing Processes Branch, NRC

Technical Specifications Task Force
Improved Standard Technical Specifications Change Traveler

Revise or Add Actions to Preclude Entry into LCO 3.0.3 - RITSTF Initiatives 6b & 6c

NUREGs Affected: ☐ 1430 ☐ 1431 ☑ 1432 ☐ 1433 ☐ 1434

Classification 1) Technical Change

Recommended for CLIIP?: Yes

Correction or Improvement: Improvement

NRC Fee Status: Exempt

Benefit: Avoids a Plant Shutdown

See attached.

Revision History

OG Revision 0 Revision Status: Closed

Revision Proposed by: CEOG

Revision Description:
Original issue.

Owners Group Review Information

Date Originated by OG: 30-May-04

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 01-Jun-04

TSTF Review Information

TSTF Received Date: 01-Jun-04 Date Distributed for Review 25-Jun-04

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 26-Aug-04

NRC Review Information

NRC Received Date: 30-Aug-04

NRC Comments: Date of NRC Letter: 13-Nov-06

Notice for Comment issued on 7/20/06. TSTF provided comments on 8/31/06.

On 11/13/06, the NRC requested revsions.

Final Resolution: NRC Requests Changes: TSTF Will Revise Final Resolution Date: 13-Nov-06

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OG Revision 0 Revision Status: Closed

TSTF Revision 1 Revision Status: Closed

Revision Proposed by: CEOG

Revision Description:
NRC approved the Topical Report in July 2004
NRC issued the Notice for Comment for TSTF-426 on July 20, 2006
In November, 2006, the NRC stated that they want changes to the Traveler, Topical, or Implementation Guidance.
PWROG withdrew the Topical Report.
In January 2008, the PWROG submitted a revised Topical Report.
TSTF-426, Rev. 1 is a complete replacement of Rev. 0 to reflect the revised Topical Report.

Owners Group Review Information

Date Originated by OG: 06-Jun-08

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 28-Jun-08

TSTF Review Information

TSTF Received Date: 29-Jun-08 Date Distributed for Review 29-Jun-08

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 02-Aug-08

NRC Review Information

NRC Received Date: 05-Aug-08

NRC Comments:
A revison to WCAP-16125 was submitted to the NRC on 5/8/2009, which necessitated revisions to TSTF-426, Rev. 1.

Final Resolution: Superceded by Revision

TSTF Revision 2 Revision Status: Closed

Revision Proposed by: CEOG

Revision Description:
TSTF-426 is revised to reflect changes in the supporting Topical Report, WCAP-16125, Revision 2, dated May, 2009.

The following changes are made:
1) TSTF-426, Revision 1, changes to the specification end-state from Mode 5 to Mode 4 are deleted in Specifications 3.6.8, 3.6.10, 3.7.13, and 3.7.15.

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TSTF Revision 2 Revision Status: Closed

2) The proposed Completion Time for Specification 3.6.6.A Condition F, is changed from 12 hours to 8 hours.
3) The proposed Completion Time for Specificattion 3.6.6.A, Condition B, is changed from 72 hours to 24 hours.
4) The proposed Condition F for Specification 3.6.6.A is deleted.
5) The proposed changes to Specification 3.6.6B are eliminated.
6) The proposed Completion Time for Specification 3.4.11, Condition F (now G), is changed from 8 hours to 4 hours.
7) References to the Topical Report are revised to reflect Revision 2.
8) Based on questions on the Topical Report, the jusification is amplified in a few locations to clarify the intent.

Owners Group Review Information

Date Originated by OG: 20-Jul-09

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date:

TSTF Review Information

TSTF Received Date: 20-Jul-09 Date Distributed for Review 03-Dec-09

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 08-Jan-10

NRC Review Information

NRC Received Date: 08-Jan-10

NRC Comments:

Revision 2 of TSTF-426 is superceded by Revision 3. Revision 3 reflects the approved version of WCAP-16125-A, submitted in August 2010.

Final Resolution: Superceded by Revision Final Resolution Date: 01-Aug-10

TSTF Revision 3 Revision Status: Closed

Revision Proposed by: TSTF

Revision Description:
TSTF-426 is revised to reflect the NRC approval of WCAP-16125-A.

The following changes are made to Revision 2:
* The changes to LCO 3.5.1 and LCO 3.5.2 are removed.
* A Condition Note is added to all of the Conditions representing a loss of function.
* The Bases are revised to discuss the added Condition Notes.
* The justification is revised to address the Condition Notes, Bases changes, and Safety Evaluation

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TSTF Revision 3 Revision Status: Closed

constraints and conditions.

Owners Group Review Information

Date Originated by OG: 09-Feb-11

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 15-Feb-11

TSTF Review Information

TSTF Received Date: 02-Mar-11 Date Distributed for Review 02-Mar-11

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 21-Mar-11

NRC Review Information

NRC Received Date: 21-Mar-11

NRC Comments:
NRC requested editorial changes per teleconference.

Final Resolution: NRC Requests Changes: TSTF Will Revise

TSTF Revision 4 Revision Status: Closed

Revision Proposed by: NRC

Revision Description:
In a teleconference held on June 29, the NRC recommended editorial improvements to TSTF-426.

The Bases for the affected Required Actions were revised to refer to "declaring" equipment inoperable versus "making" it inoperable, to "discovering" inoperable equipment versus "finding" it, and to refer to the Condition Note versus Required Action Note. The NRC recommended revising the concluding sentence to "the [12] hour Completion Time has been shown to be acceptable based on the infrequent use of the Required Actions and the small incremental effect on plant risk." The TSTF agreed to implement these changes.

The NRC also questioned the proposed changes in TSTF-426 in Specification 3.4.9, "Pressurizer," for those Combustion Engineering plants that do not require two groups of pressurizer heaters. A survey of Combustion Engineering plants determined that all require two groups of pressurizer heaters, so an administrative change to Specification 3.4.9 and the associated Bases was made to remove the brackets around the phrases "required" and "groups of" pressurizer heaters.

The NRC suggested minor editorial changes to the justification. The TSTF agreed to implement the changes.

The supporting Topical Report, WCAP-16125, included an evaluation of boration system Technical Specifications. The Boration System Technical Specifications were determined to not meet the criteria in 10

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TSTF Revision 4 Revision Status: Closed

CFR 50.36(c)(2)(ii) and do not appear in NUREG-1432, the Improved Standard Technical Specifications for Combustion Engineering plants. However, the NRC recommended including a statement that licensees with Technical Specifications not based on the ISTS may request the changes justified in WCAP-16125 in their LAR to adopt TSTF-426. The TSTF agreed to implement the change and included the provision in the model application.

The NRC's Safety Evaluation of WCAP-16125 stated, "Some designs of the ECCS PREACS rely upon the system to provide temperature control of the ECCS pump rooms, which may, therefore, impact the operability of the ECCS pumps and equipment. The NRC staff has not evaluated the unavailability of the ECCS pump room cooling function, and therefore, this TS change is prohibited if the ECCS PREACS is required by the plant design basis for ECCS pump room cooling." The NRC recommended the addition of a Reviewer's Note to the Bases of new Condition C of Specification 3.7.13, "ECCS PREACS," which states that the Condition is not applicable if the plant design relies on ECCS PREACS to provide temperature control for the ECCS pump rooms and, therefore, may affect the operability of the ECCS pumps. The TSTF agreed to implement the change.

Owners Group Review Information

Date Originated by OG: 13-Jul-11

Owners Group Comments
(No Comments)

Owners Group Resolution: Date:

TSTF Review Information

TSTF Received Date: 13-Jul-11 Date Distributed for Review 13-Jul-11

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 03-Aug-11

NRC Review Information

NRC Received Date: 08-Aug-11

NRC Comments:

The NRC requested that the TSTF revise the justification of TSTF-426, Revision 4, to eliminate the statement that one of the reasons for the change is, "Providing for increased flexibility in scheduling and performing maintenance and surveillance activities."

Final Resolution: NRC Requests Changes: TSTF Will Revise Final Resolution Date: 10-Nov-11

TSTF Revision 5 Revision Status: Active

Revision Proposed by: NRC

Revision Description:
At the November 10, 2011 TSTF/NRC public meeting, the NRC requested that the TSTF revise the justification of TSTF-426, Revision 4, to eliminate the statement that one of the reasons for the change is,

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TSTF Revision 5 Revision Status: Active

"Providing for increased flexibility in scheduling and performing maintenance and surveillance activities." TSTF-426 was revised to include Notes which do not allow voluntary entry into the loss-of-function conditions and, therefore, this statement is no longer accurate.

TSTF Review Information

TSTF Received Date: 14-Nov-11 Date Distributed for Review 14-Nov-11

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Date:

Affected Technical Specifications

Bkgnd 3.4.9 Bases	Pressurizer	
LCO 3.4.9 Bases	Pressurizer	
Ref. 3.4.9 Bases	Pressurizer	
Action 3.4.9.B	Pressurizer	
Action 3.4.9.B Bases	Pressurizer	
Action 3.4.9.C	Pressurizer	
	Change Description:	New Action
Action 3.4.9.C	Pressurizer	
	Change Description:	Relabeled D
Action 3.4.9.C Bases	Pressurizer	
	Change Description:	New Action
Action 3.4.9.C Bases	Pressurizer	
	Change Description:	Relabeled D
Ref. 3.4.11 Bases	Pressurizer PORVs	
Action 3.4.11.E	Pressurizer PORVs	
Action 3.4.11.E Bases	Pressurizer PORVs	
Action 3.4.11.F	Pressurizer PORVs	
	Change Description:	New Action
Action 3.4.11.F	Pressurizer PORVs	
	Change Description:	Relabeled G

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Action 3.4.11.F Bases	Pressurizer PORVs	
	Change Description:	New Action
Action 3.4.11.F Bases	Pressurizer PORVs	
	Change Description:	Relabeled G
Action 3.4.11.G	Pressurizer PORVs	
	Change Description:	Relabeled H
Action 3.4.11.G Bases	Pressurizer PORVs	
	Change Description:	Relabeled H
SR 3.4.11.1 Bases	Pressurizer PORVs	
Ref. 3.6.6A Bases	Containment Spray and Cooling Systems	
Action 3.6.6A.B	Containment Spray and Cooling Systems	
	Change Description:	Deleted
Action 3.6.6A.B Bases	Containment Spray and Cooling Systems	
	Change Description:	Deleted
Action 3.6.6A.C	Containment Spray and Cooling Systems	
	Change Description:	Renamed B
Action 3.6.6A.C	Containment Spray and Cooling Systems	
	Change Description:	New
Action 3.6.6A.C Bases	Containment Spray and Cooling Systems	
	Change Description:	Renamed B
Action 3.6.6A.C Bases	Containment Spray and Cooling Systems	
	Change Description:	New
Action 3.6.6A.D	Containment Spray and Cooling Systems	
Action 3.6.6A.D Bases	Containment Spray and Cooling Systems	
Action 3.6.6A.F	Containment Spray and Cooling Systems	
Action 3.6.6A.F	Containment Spray and Cooling Systems	
Action 3.6.6A.F Bases	Containment Spray and Cooling Systems	
Action 3.6.6A.G	Containment Spray and Cooling Systems	
Action 3.6.6A.G Bases	Containment Spray and Cooling Systems	
SR 3.6.6A.5 Bases	Containment Spray and Cooling Systems	
Ref. 3.6.8 Bases	SBEACS	

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Action 3.6.8.B	SBEACS	
	Change Description:	New
Action 3.6.8.B	SBEACS	
	Change Description:	Relabeled C
Action 3.6.8.B Bases	SBEACS	
	Change Description:	New
Action 3.6.8.B Bases	SBEACS	
	Change Description:	Relabeled C
SR 3.6.8.5 Bases	SBEACS	
LCO 3.6.10	ICS	
Ref. 3.6.10 Bases	ICS	
Action 3.6.10.B	ICS	
	Change Description:	New
Action 3.6.10.B	ICS	
	Change Description:	Relabeled C
Action 3.6.10.B Bases	ICS	
	Change Description:	New
Action 3.6.10.B Bases	ICS	
	Change Description:	Relabeled C
Ref. 3.7.11 Bases	CREACS	
Action 3.7.11.C	CREACS	
Action 3.7.11.C Bases	CREACS	
Action 3.7.11.F	CREACS	
Action 3.7.11.F Bases	CREACS	
SR 3.7.11.3 Bases	CREACS	
SR 3.7.11.4 Bases	CREACS	
Ref. 3.7.12 Bases	CREATCS	
Action 3.7.12.B	CREATCS	
	Change Description:	Relabeled C and revised
Action 3.7.12.B Bases	CREATCS	
	Change Description:	Relabeled C and revised

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Action 3.7.12.C	CREATCS	
	Change Description:	Relabeled D
Action 3.7.12.C Bases	CREATCS	
	Change Description:	Relabeled D
Action 3.7.12.D	CREATCS	
	Change Description:	Relabeled E
Action 3.7.12.D Bases	CREATCS	
	Change Description:	Relabeled E
Action 3.7.12.E	CREATCS	
	Change Description:	Relabeled B and revised
Action 3.7.12.E Bases	CREATCS	
	Change Description:	Relabeled B and revised
Ref. 3.7.13 Bases	ECCS PREACS	
Action 3.7.13.C	ECCS PREACS	
	Change Description:	New
Action 3.7.13.C	ECCS PREACS	
	Change Description:	Relabled D
Action 3.7.13.C Bases	ECCS PREACS	
	Change Description:	New
Action 3.7.13.C Bases	ECCS PREACS	
	Change Description:	Relabled D
SR 3.7.13.4 Bases	ECCS PREACS	
Ref. 3.7.15 Bases	PREACS	
Action 3.7.15.C	PREACS	
	Change Description:	Relabeled D
Action 3.7.15.C	PREACS	
	Change Description:	New Action
Action 3.7.15.C Bases	PREACS	
	Change Description:	New Action
Action 3.7.15.C Bases	PREACS	
	Change Description:	Relabeled D
SR 3.7.15.4 Bases	PREACS	

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1.0 Summary Description

Topical Report WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent plant Shutdown," August, 2010 (Ref. 1) justifies modifications to various Technical Specification (TS) Action Statements to add a Condition that represents a loss of safety function related to a system or component included within the scope of the plant TSs. It revises the current Required Actions from either a default or explicit Limited Condition for Operation (LCO) 3.0.3 entry to a risk-informed action based on the system's risk significance. In all but one instance, a Completion Time (CT) of 24 hours is justified. The proposed CT for the Pressurizer Power Operated Relief Valve (PORV) specification is 8 hours.

The Topical Report and this Traveler implement Risk Informed Technical Specification Task Force (RITSTF) Initiatives 6b, "Provide Conditions in the LCOs for Those Levels of Degradation Where No Condition Currently Exists to Preclude Entry Into LCO 3.0.3" and 6c, "Provide Specific Times in the LCO For Those Conditions That Require Entry Into LCO 3.0.3 Immediately."

2.0 Detailed Description

In response to the Nuclear Regulatory Commission (NRC) initiative to improve plant safety by developing risk-informed TS, the industry has undertaken a program for defining and obtaining risk-informed TS modifications. WCAP-16125-NP-A provides technical justification for the modification of various TSs to create or modify Actions to extend the time required to initiate a plant shutdown from 1 hour in accordance with LCO 3.0.3 to a risk-informed time of 8 hours or 24 hours.

The intent of the proposed modifications to the plant TS is to enhance overall plant safety by:

(a) Avoiding unnecessary plant shutdowns.

(b) Minimizing plant transitions and associated transition and realignment risks.

This Traveler revises the following Specifications in NUREG-1432 to preclude immediate entry into LCO 3.0.3 under some circumstances:

1. TS 3.4.9, "Pressurizer," for the condition of the required pressurizer heaters inoperable;
2. TS 3.4.11, "Pressurizer Power Operated Relief Valves (PORVs)," for the condition of two inoperable PORVs that cannot be manually cycled and for two inoperable block valves;
3. TS 3.6.6.A, "Containment Spray and Cooling Systems," for the condition of two containment spray trains inoperable;
4. TS 3.6.8, "Shield Building Exhaust Air Cleanup System (SPEACS)," for the condition of two SBEACS trains inoperable;

5. TS 3.6.10, "Iodine Cleanup System (ICS)," for the condition of two ICS trains inoperable;

6. TS 3.7.11, "Control Room Emergency Air Cleanup System (CREACS)," for the condition of two CREACS trains inoperable in Modes 1, 2, 3, and 4, for reasons other than an inoperable control room boundary;

7. TS 3.7.12, "Control Room Emergency Air Temperature Control System (CREATCS)," for the condition of two CREATCS trains inoperable in Modes 1, 2, 3, and 4;

8. TS 3.7.13, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)," for the condition of two ECCS PREACS trains inoperable; and

9. TS 3.7.15, "Penetration Room Exhaust Air Cleanup System (PREACS)," for the condition of two PREACS trains inoperable.

WCAP-16125-NP-A included a change to plant-specific TS on Boration Systems and this change was accepted by the NRC. This system does not appear in the Improved Standard Technical Specifications and, therefore, the proposed change does not appear in this Traveler. However, licensees may include a proposed change to the Boration Systems Technical Specifications, consistent with WCAP-16125-NP-A, in license amendment requests to adopt TSTF-426.

The Bases are modified to reflect the changes to the Specifications.

Attachment 1 contains the proposed model application for plant-specific adoption of TSTF-426.

WCAP-16125-NP-A proposed some changes that were not found acceptable by the NRC. These changes are not included in this Traveler. They are:

1. TS 3.5.1, "Safety Injection Tanks (SITs)," for the condition of two or more SITs inoperable;

2. TS 3.5.2, "Emergency Core Cooling System (ECCS) - Operating," for the conditions of two Low Pressure Safety Injection (LPSI) trains inoperable; and

3. TS 3.6.6A and TS 3.6.6B, "Containment Spray and Cooling Systems," for the condition of two containment spray trains and two containment air cooler trains inoperable.

4.0 Technical Evaluation

Topical Report WCAP-16125-NP-A (Reference 1) provides a detailed technical analysis of the justification for revising the TS Actions to allow continued operation for a finite period of time when the system or function is unavailable. The justification considered both deterministic and risk-informed evaluations and compares the results to the relevant regulatory guidance. That justification will not be repeated here.

In the Safety Evaluation for WCAP-16125-NP-A, the NRC stated:

> "All the changes are acceptable only assuming that appropriate TS notes are provided which assure that the loss of safety function action requirements are not applicable for operational convenience and that voluntary entry into these action requirements in lieu of other alternatives that would not result in redundant systems or components being inoperable are prohibited."

In public meetings held on September 9, 2010 and February 9, 2011, the industry and the NRC determined the appropriate implementation of this Safety Evaluation condition is to place a Note on each applicable condition that states:

> "Not applicable when second [system or component name] intentionally made inoperable."

The Bases are revised to provide additional explanation of the Note:

> "The Condition is modified by a Note stating it is not applicable if the second [system or component name] is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one [system or component name] is inoperable for any reason and the second [system or component name] is discovered to be inoperable, or if both [system or component name] are discovered to be inoperable at the same time."

Each proposed change is described below.

<u>TS 3.4.9, Pressurizer</u>
TS 3.4.9 does not contain a Condition for two required groups of pressurizer heaters inoperable. As a result, this condition would require immediate entry into LCO 3.0.3. A new Condition is being added for two required groups of pressurizer heaters inoperable which requires restoration of at least one required pressurizer heater to operable status within 24 hours. The Condition is modified by a note stating it is not applicable when the second group of required pressurizer heaters is intentionally made inoperable.

The NUREG-1432 pressurizer Specification and Bases contain plant-specific (i.e. bracketed) references to two groups of required pressurized heaters, implying that some Combustion Engineering plants do not require two groups of pressurizer heaters. Accommodating such a design difference in this change would be complex. However, a review of Combustion Engineering plant Technical Specifications determined that all of the plants require two groups of pressurizer heaters. Therefore, the brackets around these references have been removed as an administrative change.

<u>TS 3.4.11, Pressurizer PORVs</u>
TS 3.4.11, Condition E, states that with two PORVs inoperable and not capable of being manually cycled, close and remove power from the associated block valves within 1 hour and be in Mode 3 in 6 hours and Mode 4 in [12] hours. Condition E is modified to add new Required Actions to verify that LCO 3.7.5, "Auxiliary Feedwater," is met (i.e., all Auxiliary Feedwater trains are Operable) within 1 hour and to restore at least one PORV to Operable status within 8 hours. Condition E is modified by a note stating it is not applicable when the second PORV is

intentionally made inoperable. A new Condition F is added which applies if the Required Actions and associated Completion Times of Condition E are not met. Condition F requires being in Mode 3 in 6 hours and Mode 4 in [12] hours.

Condition F, now Condition G, applies when two block valves are inoperable. Proposed Condition G is modified to add new Required Actions to verify that LCO 3.7.5, "Auxiliary Feedwater," is met (i.e., all Auxiliary Feedwater trains are Operable) within 1 hour and to restore at least one block valve to Operable status within 8 hours. Condition G is modified by a note stating it is not applicable when the second block valve is intentionally made inoperable. Subsequent Actions are renumbered.

Licensees adopting this Traveler must confirm or modify their Technical Specifications to contain requirements equivalent to the Improved Standard Technical Specifications (ISTS) pressurizer PORV TS with regards to leaking and unisolable PORVs.

<u>TS 3.6.6A, Containment Spray and Cooling Systems</u>
NUREG-1432 contains two containment spray and cooling system TS – one for plants that credit containment sprays for iodine removal (3.6.6A) and one for that plants that do not (3.6.6B). TS 3.6.6B is not affected by the proposed change.

Specification 3.6.6A contains Condition G which applies when two containment spray trains are inoperable or any combinations of three or more trains are inoperable. Condition G requires entering LCO 3.0.3 immediately. The proposed change modifies Condition G to no longer apply when two containment spray trains are inoperable. A new Condition C is added for two containment spray trains inoperable with Required Actions to restore at least one train within 24 hours and to verify within 1 hour that at least one train of CREACS is Operable. Condition C is modified by a note stating it is not applicable when the second containment spray train is intentionally made inoperable.

The Topical Report states that Condition C is applicable when two containment spray trains inoperable provided that at least one containment air cooler is Operable. This restriction is imposed by Condition G, which addresses any combination of three or more trains inoperable with a Required Action to enter LCO 3.0.3 immediately.

Condition B provided a shutdown track for Condition A. Condition B is eliminated and Condition F is revised to provide a shutdown track for all Conditions. Existing Condition C is renamed Condition B.

The Bases are revised to reflect the changes to the TS. The order of two references is revised so that the references are numbered in order of appearance.

<u>TS 3.6.8, Shield Building Exhaust Air Cleanup System (SBEACS)</u>
TS 3.6.8 does not contain a Condition for both SBEACS trains inoperable. As a result, this condition would require immediate entry into LCO 3.0.3. A new Condition B is added which applies when two SBEACS trains are inoperable and allows 24 hours to restore at least one SBEACS train to Operable status and requires verification within 1 hour that at least one train of containment spray is Operable. Existing Condition B is renamed Condition C. Condition B is

modified by a note stating it is not applicable when the second SBEACS train is intentionally made inoperable.

The Bases are revised to reflect the changes to the TS. The order of two references is revised so that the references are numbered in order of appearance.

TS 3.6.10, Iodine Cleanup System (ICS)
TS 3.6.10 does not contain a Condition for both ICS trains inoperable. As a result, this condition would require immediate entry into LCO 3.0.3. A new Condition B is added which applies when two ICS trains are inoperable and allows 24 hours to restore at least one ICS train to Operable status and requires verification within 1 hour that at least one train of containment spray is Operable. Existing Condition B is renamed Condition C. Condition B is modified by a note a note stating it is not applicable when the second ICS train is intentionally made inoperable.

An editorial change is made to the LCO. The LCO requires "[Two]" ICS trains to be Operable. The brackets around "Two" are removed. The Bases describe a two train system and WCAP-16125-NP-A describes a two train system. It does not appear that the number of systems should be bracketed and removing the brackets allows addition of an unambiguous action for two trains inoperable.

The Bases are revised to reflect the changes to the TS.

TS 3.7.11, Control Room Emergency Air Cleanup System (CREACS)
TS 3.7.11, Condition F, applies when two CREACS trains are inoperable due to any reason other than an inoperable control room boundary in Modes 1, 2, 3, or 4 and requires entering LCO 3.0.3 immediately. The Topical Report justifies a 24 hour Completion Time for two CREACS trains inoperable for any reason provided that mitigating actions are implemented and it is verified that LCO 3.4.16, "RCS Specific Activity," is met within 1 hour. Condition F is revised to require restoration of at least one CREACS train to Operable status within 24 hours and Condition F is moved to Condition C. Proposed Condition C is modified by a note a note stating it is not applicable when the second CREACS train is intentionally made inoperable. Existing Condition C requires entering Mode 3 in 6 hours and Mode 5 in 36 hours. Existing Condition C is moved to Condition F and is modified to apply to the new Condition C.

The requirement to immediately initiate action to implement mitigating actions in Required Action C.1 is the same as in existing Action B.1. Action B.1 was added by TSTF-448-A, Revision 3, "Control Room Habitability," which was approved by the NRC on January 17, 2007. Condition F is equivalent to the action to take mitigating actions in Condition B. Licensees desiring to adopt the proposed change to TS 3.7.11 that have not adopted TSTF-448-A must implement mitigating actions equivalent to those described in TSTF-448-A.

The Bases are revised to reflect the changes to the TS. The Topical Report discusses the Required Action to take mitigating actions and states that the mitigating actions will be contained in administrative controls. This is consistent with the treatment of mitigating actions required by the current Condition B.

TS 3.7.12, Control Room Emergency Air Temperature Control System (CREATCS)
TS 3.7.1.2, Action E, applies when two CREATCS trains are inoperable in Mode 1, 2, 3, or 4 and requires entering LCO 3.0.3 immediately. The Topical Report justifies a 24 hour Completion Time for two CREATCS trains inoperable. Condition E is revised to require restoration of at least one CREATCS train to Operable status within 24 hours. Condition E is moved to Condition B and the subsequent Actions are renumbered. Proposed Condition B is modified by a note a note stating it is not applicable when the second CREATCS train is intentionally made inoperable. Existing Condition B, now Condition C, which requires entering Mode 3 in 6 hours and Mode 5 in 36 hours, is modified to apply to the new Condition B.

The Bases are revised to reflect the changes to the TS. The Topical Report states that administrative guidance should be in place for alternate means of establishing temporary control room cooling, such as normal (i.e., non-safety) ventilation systems, opening cabinet doors, use of fans or ice vests, and opening CR doors or ventilation paths. In the Safety Evaluation for WCAP-16125-NP-A, the NRC noted that these actions are typically found in plant procedures and are not required to be implemented by TS controls.

TS 3.7.13, ECCS Pump Room Exhaust Air Cleanup System (ECCS PREACS)
TS 3.7.13 does not contain a Condition for both ECCS PREACS trains inoperable. As a result, this condition would require immediate entry into LCO 3.0.3. A new Condition C is added which applies when two ECCS PREACS trains are inoperable and allows 24 hours to restore at least one ECCS PREACS train to Operable status. The proposed Condition C is modified by a note stating it is not applicable when the second ECCS PREACS train is intentionally made inoperable. The subsequent Actions are renumbered.

The Safety Evaluation for WCAP-16125-NP-A noted that the 24 hour Completion Time is not applicable if the ECCS PREACS is required by the plant design basis for ECCS pump room cooling. This Safety Evaluation condition is reflected in a Reviewer's Note to the Bases of the new Condition C.

The Bases are revised to reflect the changes to the TS. As noted in the Bases, the ECCS and pH control requirements can reduce radiological releases during severe accidents. Administrative guidance will be provided in the maintenance rule procedures to note the importance of LCO 3.5.2, "ECCS Operating" and LCO 3.5.5, "Trisodium" when in this ECCS PREACS condition.

TS 3.7.15, Penetration Room Exhaust Air Cleanup System (PREACS)
TS 3.7.15 does not contain a Condition for both PREACS trains inoperable. As a result, this condition would require immediate entry into LCO 3.0.3. A new Condition C is added which applies when two PREACS trains are inoperable and allows 24 hours to restore at least one PREACS train to Operable status and requires verification within 1 hour that at least one train of containment spray is Operable. The subsequent Actions are renumbered. The proposed Condition C is modified by a note stating it is not applicable when the second PREACS train is intentionally made inoperable.

The Bases are revised to reflect the changes to the TS.

4.0 Regulatory Evaluation

4.1 Applicable Regulatory Requirements/Criteria

General guidance for evaluating the technical basis for proposed risk-informed changes is provided in Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," of the NRC Standard Review Plan (SRP), NUREG-0800. More specific guidance related to risk-informed TS changes, including changes to TS CTs, is provided in SRP Section 16.1, "Risk-Informed Decisionmaking: Technical Specifications." The NRC review of WCAP-16125-NP-A determined that the proposed change meets the acceptance criteria in the SRP for risk-informed changes.

10 CFR 50.36 provides the requirement for all licenses to contain Technical Specifications. 10 CFR 50.36(c)(2) states that when a limiting condition for operation is not met, the licensee shall shut down the plant or follow any remedial action permitted by the technical specifications until the condition can be met. Thus, the regulatory requirements are not specific regarding the actions to be followed when Technical Specification requirements are not met. The proposed change to the Technical Specification Actions do not affect regulatory requirements.

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

4.2 No Significant Hazards Consideration Determination

The TSTF has evaluated whether or not a significant hazards consideration is involved with the proposed generic change by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response: No.

   The proposed change provides a short Completion Time to restore an inoperable system for conditions under which the existing Technical Specifications require a plant shutdown to begin within one hour in accordance with Limiting Condition for Operation (LCO) 3.0.3. Entering into Technical Specification Actions is not an initiator of any accident previously evaluated. As a result, the probability of an accident previously evaluated is not significantly increased. The consequences of any accident previously evaluated that may occur during the proposed Completion Times are no different from the consequences of the same accident during the existing one hour allowance. As a result, the consequences of any accident previously evaluated are not significantly increased.

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

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

   Response: No.

   No new or different accidents result from utilizing the proposed change. The changes do not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. In addition, the changes do not impose any new or different requirements. The changes do not alter assumptions made in the safety analysis.

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

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

   Response: No.

   The proposed change provides a short Completion Time to restore an inoperable system for conditions under which the existing Technical Specifications require a plant shutdown to begin within one hour in accordance with LCO 3.0.3. The analyses in WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent plant Shutdown," Revision 2, August 2010, demonstrated that there is an acceptably small increase in risk due to a limited period of continued operation in these conditions and that this risk is balanced by avoiding the risks associated with a plant shutdown. As a result, the change to the margin of safety provided by requiring a plant shutdown within one hour is not significant.

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

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

5.0 Environmental Consideration

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

6.0 References

1. WCAP-16125-NP-A, Revision 2, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent plant Shutdown," August 2010.

Attachment 1

Model Application for Adoption of TSTF-426

[DATE] 10 CFR 50.90

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

SUBJECT: PLANT NAME
DOCKET NO. 50-[xxx]
APPLICATION TO REVISE TECHNICAL SPECIFICATIONS TO ADOPT TSTF-426, "REVISE OR ADD ACTIONS TO PRECLUDE ENTRY INTO LCO 3.0.3 - RITSTF INITIATIVES 6B & 6C," USING THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS

Dear Sir or Madam:

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

The proposed amendment would modify TS requirements to adopt the changes described in TSTF-426, Revision 4, "Revise or Add Actions to Preclude Entry into LCO 3.0.3 - RITSTF Initiatives 6b & 6c."

Attachment 1 provides a description and assessment of the proposed changes, the requested confirmation of applicability, and plant-specific verifications. Attachment 2 provides the existing TS pages marked up to show the proposed changes. Attachment 3 provides revised (clean) TS pages. Attachment 4 provides existing TS Bases pages marked up to show the proposed changes.

Approval of the proposed amendment is requested by [date]. Once approved, the amendment shall be implemented within [ ] days.

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

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

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

Sincerely,

[Name, Title]

Attachments:
1. Description and Assessment
2. Proposed Technical Specification Changes (Mark-Up)
3. Revised Technical Specification Pages
4. Proposed Technical Specification Bases Changes (Mark-Up)

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

ATTACHMENT 1 - DESCRIPTION AND ASSESSMENT

1.0 DESCRIPTION

The proposed change provides a short Completion Time to restore an inoperable system for conditions under which the existing Technical Specifications require a plant shutdown. The proposed amendment is consistent with TSTF-426, Revision 4, "Revise or Add Actions to Preclude Entry into LCO 3.0.3 - RITSTF Initiatives 6b & 6c."

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

[LICENSEE] has reviewed the model safety evaluation dated [DATE] as part of the Federal Register Notice of Availability. This review included a review of the Nuclear Regulatory Commission (NRC) staff evaluation, as well as the information provided in TSTF-426, Revision 4, and the referenced Topical Report WCAP-16125-NP-A, Revision 2, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent plant Shutdown". [As described in the subsequent paragraphs,][LICENSEE] has concluded that the justifications presented in the TSTF-426 proposal and the model safety evaluation prepared by the NRC staff are applicable to [PLANT, UNIT NOS.] and justify this amendment for the incorporation of the changes to the [PLANT] Technical Specifications.

2.2 Optional Changes and Variations

[LICENSEE is not proposing any variations or deviations from the Technical Specifications changes described in the TSTF-426, Revision 4, or the applicable parts of the NRC staff's model safety evaluation dated [DATE].] [LICENSEE is proposing the following variations from the Technical Specifications changes described in the TSTF-426, Revision 4, or the applicable parts of the NRC staff's model safety evaluation dated [DATE].]

[The [PLANT] accident analyses do not credit containment spray for iodine removal. Therefore the TSTF-426 changes to Technical Specification 3.6.6A are not applicable.]

[The [PLANT] design does not include a [Shield Building Exhaust Air Cleanup System, Iodine Cleanup System, and Pressurizer PORVs]. Therefore the TSTF-426 changes for those systems are not included.]

[The [PLANT] Technical Specifications contain requirements on the Boration System which do not appear in the Improved Standard Technical Specifications and, therefore, do not appear TSTF-426. The referenced Topical Report, WCAP-16125-NP-A, included changes to the Boration System Technical Specifications that were found to be acceptable by the NRC. As a result, proposed changes are included to the [PLANT] Boration System technical Specifications, consistent with those evaluated and found acceptable in WCAP-16125-NP-A.]

[The [PLANT] Technical Specifications utilize different [numbering][and][titles] than the Standard Technical Specifications on which TSTF-426 was based. Specifically, [describe differences between the plant-specific Technical Specifications numbering and/or titles and the TSTF-426 numbering and titles.] These differences are administrative and do not affect the applicability of TSTF-426 to the [PLANT] Technical Specifications.]

2.3 Licensee Verifications

[[LICENSEE] confirms that plant procedures can establish temporary alternate means of control room cooling, as assumed in the justification of the proposed change to the Control Room Emergency Air Temperature Control System.]

[The [PLANT] Technical Specifications are not based on the NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." [LICENSEE] [confirms] [proposes to modify] the pressurizer Power Operated Relief Valve (PORV) Technical Specification [to] contain requirements equivalent to NUREG-1432 with regard to leaking and unisolable PORVs.]

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

[LICENSEE] requests adoption of TSTF-426, Revision 4, "Revise or Add Actions to Preclude Entry into LCO 3.0.3 - RITSTF Initiatives 6b & 6c," which is an approved change to the standard technical specifications (STS), into the [PLANT NAME, UNIT NOS] Technical Specifications. The proposed change provides a short Completion Time to restore an inoperable system for conditions under which the existing Technical Specifications require a plant shutdown to begin within one hour in accordance with Limiting Condition for Operation (LCO) 3.0.3.

[LICENSEE] has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response: No.

   The proposed change provides a short Completion Time to restore an inoperable system for conditions under which the existing Technical Specifications require a plant shutdown to begin within one hour in accordance with Limiting Condition for Operation (LCO) 3.0.3. Entering into Technical Specification Actions is not an initiator of any accident previously evaluated. As a result, the probability of an accident previously evaluated is not significantly increased. The consequences of any accident previously evaluated that may occur during the proposed Completion Times are no different from the consequences of the same accident during the existing one hour allowance. As a result, the consequences of any accident previously evaluated are not significantly increased.

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

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

   Response: No.

   No new or different accidents result from utilizing the proposed change. The changes do not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. In addition, the changes do not impose any new or different requirements. The changes do not alter assumptions made in the safety analysis.

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

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

   Response: No.

   The proposed change increase the time the plant may operate without the ability to perform an assumed safety function. The analyses in WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent plant Shutdown," Revision 2, August 2010, demonstrated that there is an acceptably small increase in risk due to a limited period of continued operation in these conditions and that this risk is balanced by avoiding the risks associated with a plant shutdown. As a result, the change to the margin of safety provided by requiring a plant shutdown within one hour is not significant.

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

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

4.0 ENVIRONMENTAL EVALUATION

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

impact statement or environmental assessment need be prepared in connection with the proposed change.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Pressurizer

LCO 3.4.9 The pressurizer shall be OPERABLE with:

a. Pressurizer water level < [60]% and

b. ~~[~~Two groups of~~]~~ pressurizer heaters OPERABLE with the capacity [of each group] ≥ [150] kW [and capable of being powered from an emergency power supply].

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer water level not within limit.	A.1 Be in MODE 3 with reactor trip breakers open. AND A.2 Be in MODE 4.	6 hours [12] hours
B. One ~~[~~required~~]~~ group of pressurizer heaters inoperable.	B.1 Restore ~~[~~required~~]~~ group of pressurizer heaters to OPERABLE status.	72 hours
C. ---------- NOTE ---------- Not applicable when second group of required pressurizer heaters intentionally made inoperable. ---------- Two required groups of pressurizer heaters inoperable.	C.1 Restore at least one group of required pressurizer heaters to OPERABLE status.	24 hours
~~C~~D. Required Action and associated Completion	~~C~~D.1 Be in MODE 3.	6 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
Time of Condition B or C not met.	AND ~~C~~D.2 Be in MODE 4.	[12] hours

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

----------NOTE----------
Separate Condition entry is allowed for each PORV and each block valve.

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. AND B.2 Remove power from associated block valve. AND B.3 Restore PORV to OPERABLE status.	1 hour 1 hour 72 hours
C. One block valve inoperable.	C.1 Place associated PORV in manual control. AND	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2 Restore block valve to OPERABLE status.	72 hours
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	6 hours [12] hours
E. ---------- NOTE ---------- Not applicable when second PORV intentionally made inoperable. ---------- Two PORVs inoperable and not capable of being manually cycled.	E.1 Close associated block valves. AND E.2 Remove power from associated block valves. AND E.3 Verify LCO 3.7.5, "Auxiliary Feedwater System," is met. AND E.4 Restore at least one PORV to OPERABLE status. ~~E.3 Be in MODE 3.~~ ~~AND~~ ~~E.4 Be in MODE 4.~~	1 hour 1 hour 1 hour 8 hours ~~6 hours~~ ~~[12] hours~~
F. Required Actions and Associated Completion Times of Condition E not met.	F.1 Be in MODE 3. AND F.2 Be in MODE 4.	6 hours [12] hours
G~~F~~. ---------- NOTE ---------- Not applicable when second block valve	G.1 Verify LCO 3.7.5, "Auxiliary Feedwater System," is met.	1 hour

intentionally made inoperable. ---------- Two block valves inoperable.	AND ~~GF~~.~~21~~ Restore at least one block valve to OPERABLE status.	~~82~~ hours
~~HG~~. Required Action and associated Completion Time of Condition ~~GF~~ not met.	~~HG~~.1 Be in MODE 3. AND ~~HG~~.2 Be in MODE 4.	6 hours [12] hours

3.6 CONTAINMENT SYSTEMS

3.6.6A Containment Spray and Cooling Systems (Atmospheric and Dual) (Credit taken for iodine removal by the Containment Spray System)

LCO 3.6.6A Two containment spray trains and two containment cooling trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	[7] days
~~B. Required Action and associated Completion Time of Condition A not met.~~	~~B.1 Be in MODE 3.~~ ~~AND~~ ~~B.2 Be in MODE 5.~~	~~6 hours~~ ~~84 hours~~
B~~C~~. One containment cooling train inoperable.	B~~C~~.1 Restore containment cooling train to OPERABLE status.	7 days
C. ---------- NOTE ---------- Not applicable when second containment spray train intentionally made inoperable. ---------- Two containment spray trains inoperable.	C.1 Verify LCO 3.7.11, "CREACS," is met. AND C.2 Restore at least one containment spray train to OPERABLE status.	1 hour 24 hours
D. One containment spray train and one containment cooling train inoperable.	D.1 Restore containment spray train to OPERABLE status. OR	72 hours

CONDITION	REQUIRED ACTION		COMPLETION TIME
	D.2	Restore containment cooling train to OPERABLE status.	72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two containment cooling trains inoperable.	E.1 Restore one containment cooling train to OPERABLE status.	72 hours
F. Required Action and associated Completion Time ~~of Condition C, D, or E~~ not met.	F.1 Be in MODE 3. AND F.2 Be in MODE 5.	6 hours 36 hours
G. ~~Two containment spray trains inoperable.~~ ~~OR~~ Any combination of three or more trains inoperable.	G.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6A.1	Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6A.2	Operate each containment cooling train fan unit for ≥ 15 minutes.	31 days
SR 3.6.6A.3	Verify each containment cooling train cooling water flow rate is ≥ [2000] gpm to each fan cooler.	31 days

3.6 CONTAINMENT SYSTEMS

3.6.8 Shield Building Exhaust Air Cleanup System (SBEACS) (Dual)

LCO 3.6.8 Two SBEACS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SBEACS train inoperable.	A.1 Restore train to OPERABLE status.	7 days
B. ---------- NOTE ---------- Not applicable when second SBEACS train intentionally made inoperable. ---------- Two SBEACS trains inoperable.	B.1 Verify at least one train of containment spray is OPERABLE. AND B.2 Restore at least one SBEACS train to OPERABLE status.	1 hour 24 hours
C~~B~~. Required Action and Associated Completion Time not met.	C~~B~~.1 Be in MODE 3. AND C~~B~~.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.8.1	Operate each SBEACS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days

3.6 CONTAINMENT SYSTEMS

3.6.10 Iodine Cleanup System (ICS) (Atmospheric and Dual)

LCO 3.6.10 ~~[~~Two~~]~~ ICS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ICS train inoperable.	A.1 Restore ICS train to OPERABLE status.	7 days
B. ---------- NOTE ---------- Not applicable when second ICS train intentionally made inoperable. ---------- Two ICS trains inoperable.	B.1 Verify at least one train of containment spray is OPERABLE. AND B.2 Restore at least one ICS train to OPERABLE status.	1 hour 24 hours
C~~B~~. Required Action and associated Completion Time not met.	C~~B~~.1 Be in MODE 3. AND C~~B~~.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.10.1	Operate each ICS train for [≥ 10 continuous hours with heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Cleanup System (CREACS)

LCO 3.7.11 Two CREACS trains shall be OPERABLE.

----------NOTE----------
The control room envelope (CRE) boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, 4, [5, and 6,]
During movement of [recently] irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREACS train inoperable for reasons other than Condition B.	A.1 Restore CREACS train to OPERABLE status.	7 days
B. One or more CREACS trains inoperable due to inoperable CRE boundary in MODE 1, 2, 3, or 4.	B.1 Initiate action to implement mitigating actions. AND B.2 Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits. AND B.3 Restore CRE boundary to OPERABLE status.	Immediately 24 hours 90 days
~~C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.~~	~~C.1 Be in MODE 3.~~ ~~AND~~ ~~C.2 Be in MODE 5.~~	~~6 hours~~ ~~36 hours~~

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ---------- NOTE ---------- Not applicable when second CREACS train intentionally made inoperable. ---------- Two CREACS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	C.1 Initiate action to implement mitigating actions. AND C.2 Verify LCO 3.4.16, "RCS Specific Activity," is met. AND C.3 Restore at least one CREACS train to OPERABLE status.	Immediately 1 hour 24 hours
D. Required Action and associated Completion Time of Condition A not met [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.	D.1 ----------NOTE---------- Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable. ---------- Place OPERABLE CREACS train in emergency radiation protection mode. OR D.2 Suspend movement of [recently] irradiated fuel assemblies.	 Immediately Immediately
E. Two CREACS trains inoperable [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies. OR One or more CREACS trains inoperable due to	E.1 Suspend movement of [recently] irradiated fuel assemblies.	Immediately

an inoperable CRE boundary [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.		
~~F. Two CREACS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.~~	~~F.1 Enter LCO 3.0.3.~~	~~Immediately~~
F. Required Action and associated Completion Time of Condition A, B, or C not met in MODE 1, 2, 3, or 4.	F.1 Be in MODE 3. AND F.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Operate each CREACS train for [≥ 10 continuous hours with heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days

3.7 PLANT SYSTEMS

3.7.12 Control Room Emergency Air Temperature Control System (CREATCS)

LCO 3.7.12 Two CREATCS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, [5, and 6,]
During movement of [recently] irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREATCS train inoperable.	A.1 Restore CREATCS train to OPERABLE status.	30 days
B. ---------- NOTE ---------- Not applicable when second CREATCS train intentionally made inoperable. ---------- Two CREATCS trains inoperable in MODE 1, 2, 3, or 4.	B.1 Restore at least one CREATCS train to OPERABLE status.	24 hours
C~~B~~. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C~~B~~.1 Be in MODE 3. AND C~~B~~.2 Be in MODE 5.	6 hours 36 hours
D~~C~~. Required Action and associated Completion Time of Condition A not met [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.	D~~C~~.1 Place OPERABLE CREATCS train in operation. OR D~~C~~.2 Suspend movement of [recently] irradiated fuel assemblies.	Immediately Immediately

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~E~~D. Two CREATCS trains inoperable [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.	~~E~~D.1 Suspend movement of [recently] irradiated fuel assemblies.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~E. Two CREATCS trains inoperable in MODE 1, 2, 3, or 4.~~	~~E.1 Enter LCO 3.0.3.~~	~~Immediately~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Verify each CREATCS train has the capability to remove the assumed heat load.	[18] months

3.7 PLANT SYSTEMS

3.7.13 Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)

LCO 3.7.13 Two ECCS PREACS trains shall be OPERABLE.

----------NOTE----------
The ECCS pump room boundary may be opened intermittently under administrative control.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ECCS PREACS train inoperable.	A.1 Restore ECCS PREACS train to OPERABLE status.	7 days
B. Two ECCS PREACS trains inoperable due to inoperable ECCS pump room boundary.	B.1 Restore ECCS pump room boundary to OPERABLE status.	24 hours
C. ---------- NOTE ---------- Not applicable when second ECCS PREACS train intentionally made inoperable. ---------- Two ECCS PREACS trains inoperable for reasons other than Condition B.	C.1 Restore at least one ECCS PREACS train to OPERABLE status.	24 hours
D~~C~~. Required Action and associated Completion Time not met.	D~~C~~.1 Be in MODE 3. AND D~~C~~.2 Be in MODE 5.	6 hours 36 hours

3.7 PLANT SYSTEMS

3.7.15 Penetration Room Exhaust Air Cleanup System (PREACS)

LCO 3.7.15 Two PREACS trains shall be OPERABLE.

----------NOTE----------
The penetration room boundary may be opened intermittently under administrative control.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One PREACS train inoperable.	A.1 Restore PREACS train to OPERABLE status.	7 days
B. Two PREACS trains inoperable due to inoperable penetration room boundary.	B.1 Restore penetration room boundary to OPERABLE status.	24 hours
C. ---------- NOTE ---------- Not applicable when second PREACS train intentionally made inoperable. ---------- Two PREACS trains inoperable for reasons other than Condition C.	C.1 Verify at least one train of containment spray is OPERABLE. AND C.2 Restore at least one ECCS PREACS train to OPERABLE status.	1 hour 24 hours
D~~C~~. Required Action and associated Completion Time not met.	D~~C~~.1 Be in MODE 3. AND D~~C~~.2 Be in MODE 5.	6 hours 36 hours

BASES

BACKGROUND (continued)

The requirement to have ~~[~~two groups of~~]~~ pressurizer heaters ensures that RCS pressure can be maintained. The pressurizer heaters maintain RCS pressure to keep the reactor coolant subcooled. Inability to control RCS pressure during natural circulation flow could result in loss of single phase flow and decreased capability to remove core decay heat.

APPLICABLE SAFETY ANALYSES

In MODES 1, 2, and 3, the LCO requirement for a steam bubble is reflected implicitly in the accident analyses. No safety analyses are performed in lower MODES. All analyses performed from a critical reactor condition assume the existence of a steam bubble and saturated conditions in the pressurizer. In making this assumption, the analyses neglect the small fraction of noncondensible gases normally present.

Safety analyses presented in the FSAR do not take credit for pressurizer heater operation; however, an implicit initial condition assumption of the safety analyses is that the RCS is operating at normal pressure.

Although the heaters are not specifically used in accident analysis, the need to maintain subcooling in the long term during loss of offsite power, as indicated in NUREG-0737 (Ref. 1), is the reason for their inclusion. The requirement for emergency power supplies is based on NUREG-0737 (Ref. 1). The intent is to keep the reactor coolant in a subcooled condition with natural circulation at hot, high pressure conditions for an undefined, but extended, time period after a loss of offsite power. While loss of offsite power is a coincident occurrence assumed in the accident analyses, maintaining hot, high pressure conditions over an extended time period is not evaluated in the accident analyses.

The pressurizer satisfies Criterion 2 and Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

----------REVIEWER'S NOTE----------
Plants licensed prior to the issuance of NUREG-0737 may not have a requirement on the number of pressurizer groups.

The LCO requirement for the pressurizer to be OPERABLE with water level < [60]% ensures that a steam bubble exists. Limiting the maximum operating water level preserves the steam space for pressure control. The LCO has been established to minimize the consequences of potential overpressure transients. Requiring the presence of a steam bubble is also consistent with analytical assumptions.

BASES

LCO (continued)

The LCO requires ~~[~~two groups of~~]~~ OPERABLE pressurizer heaters, [each] with a capacity ≥ [150] kW [and capable of being powered from an emergency power supply]. The minimum heater capacity required is sufficient to maintain the RCS near normal operating pressure when accounting for heat losses through the pressurizer insulation. By maintaining the pressure near the operating conditions, a wide subcooling margin to saturation can be obtained in the loops. The exact design value of [150] kW is derived from the use of 12 heaters rated at 12.5 kW each. The amount needed to maintain pressure is dependent on the ambient heat losses.

APPLICABILITY

The need for pressure control is most pertinent when core heat can cause the greatest effect on RCS temperature resulting in the greatest effect on pressurizer level and RCS pressure control. Thus, Applicability has been designated for MODES 1 and 2. The Applicability is also provided for MODE 3. The purpose is to prevent solid water RCS operation during heatup and cooldown to avoid rapid pressure rises caused by normal operational perturbation, such as reactor coolant pump startup. The LCO does not apply to MODE 5 (Loops Filled) because LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," applies. The LCO does not apply to MODES 5 and 6 with partial loop operation.

In MODES 1, 2, and 3, there is the need to maintain the availability of pressurizer heaters capable of being powered from an emergency power supply. In the event of a loss of offsite power, the initial conditions of these MODES gives the greatest demand for maintaining the RCS in a hot pressurized condition with loop subcooling for an extended period. For MODE 4, 5, or 6, it is not necessary to control pressure (by heaters) to ensure loop subcooling for heat transfer when the Shutdown Cooling System is in service and therefore the LCO is not applicable.

ACTIONS

A.1 and A.2

With pressurizer water level not within the limit, action must be taken to restore the plant to operation within the bounds of the safety analyses. To achieve this status, the unit must be brought to MODE 3, with the reactor trip breakers open, within 6 hours and to MODE 4 within [12] hours. This takes the plant out of the applicable MODES and restores the plant to operation within the bounds of the safety analyses.

BASES

ACTIONS (continued)

Six hours is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging plant systems. Further pressure and temperature reduction to MODE 4 brings the plant to a MODE where the LCO is not applicable. The 12 hour time to reach the nonapplicable MODE is reasonable based on operating experience for that evolution.

B.1

If one ~~[~~required~~]~~ group of pressurizer heaters is inoperable, restoration is required within 72 hours. The Completion Time of 72 hours is reasonable considering that a demand caused by loss of offsite power would be unlikely in this period. Pressure control may be maintained during this time using normal station powered heaters.

C.1

If two required groups of pressurizer heaters are inoperable, restoring at least one group of pressurizer heaters to OPERABLE status is required within 24 hours. The Condition is modified by a Note stating it is not applicable if the second group of required pressurized heaters is intentionally declared inoperable. The Condition is not intended for voluntary removal of redundant systems or components from service. The Condition is only applicable if one group of required pressurized heaters is inoperable for any reason and the second group of required pressurized heaters is discovered to be inoperable, or if both groups of required pressurized heaters are discovered to be inoperable at the same time. If both required groups of pressurizer heaters are inoperable, the pressurizer heaters may not be available to help maintain subcooling in the RCS loops during a natural circulation cooldown following a loss of offsite power. The inoperability of two groups of required pressurizer heaters during the 24 hour Completion Time has been shown to be acceptable based on the infrequent use of the Required Action and the small incremental effect on plant risk (Ref. 2).

~~C~~D.1 and D~~C~~.2

If one or more ~~[~~required~~]~~ group of pressurizer heaters is inoperable and cannot be restored within the allowed Completion Times~~ of Required Action B.1~~, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 6 hours and to MODE 4 within [12] hours. The Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3

from full power in an orderly manner and without challenging safety systems. Similarly, the Completion Time of [12] hours is reasonable, based on operating experience, to reach MODE 4 from full power in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.4.9.1

This Surveillance ensures that during steady state operation, pressurizer water level is maintained below the nominal upper limit to provide a minimum space for a steam bubble. The Surveillance is performed by observing the indicated level. The 12 hour interval has been shown by operating practice to be sufficient to regularly assess the level for any deviation and verify that operation is within safety analyses assumptions. Alarms are also available for early detection of abnormal level indications.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.4.9.2

----------REVIEWER'S NOTE----------
The frequency for performing pressurizer heater capacity testing shall be either 18 months or 92 days, depending on whether or not the plant has dedicated safety-related heaters. For dedicated safety-related heaters, which do not normally operate, 92 days is applied. For non-dedicated safety-related heaters, which normally operate, 18 months is applied.

The Surveillance is satisfied when the power supplies are demonstrated to be capable of producing the minimum power and the associated pressurizer heaters are verified to be at their design rating. (This may be done by testing the power supply output and by performing an electrical check on heater element continuity and resistance.) The Frequency of [18] months is considered adequate to detect heater degradation and has been shown by operating experience to be acceptable.

[SR 3.4.9.3

This SR is not applicable if the heaters are permanently powered by 1E power supplies.

This Surveillance demonstrates that the heaters can be manually transferred to and energized by emergency power supplies. The Frequency of [18] months is based on a typical fuel cycle and industry accepted practice. This is consistent with similar verifications of emergency power.]

REFERENCES

1. NUREG-0737, November 1980.

2. WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 2, August 2010.

BASES

ACTIONS (continued)

valve is based upon the Completion Time for restoring an inoperable PORV in Condition B since the PORVs are not capable of automatically mitigating an overpressure event when placed in manual control. If the block valve is restored within the Completion Time of 72 hours, the power will be restored and the PORV restored to OPERABLE status.

D.1 and D.2

If the Required Action cannot be met within the associated Completion Time, 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 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.

E.1, E.2, E.3, and E.4

If two ~~more than one~~ PORVs are~~is~~ inoperable and not capable of being manually cycled, it is necessary to isolate the flow path by closing and removing the power to the associated block valves within 1 hour and to ~~either~~ restore at least one ~~valve~~ PORV within ~~the Completion Time of~~ 8 hours~~1 hour or isolate the flow path by closing and removing the power to the associated block valves~~. The Condition is modified by a Note stating it is not applicable if the second PORV train is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is applicable if one PORV is inoperable for any reason and the second PORV is discovered to be inoperable, or if both PORVs are discovered to be inoperable at the same time.

In the event of a loss of feedwater, the PORVs would be used to remove core heat. In order to minimize the consequences of a loss of feedwater while two PORVs are inoperable, Required Action E.3 requires that LCO 3.7.5, "Auxiliary Feedwater System," be met to ensure AFW is available. ~~The Completion Time of 1 hour is reasonable based on the small potential for challenges to the system during this time and provides the operator time to correct the situation.~~ The inoperability of two PORVs during the 8 hour Completion Time has been shown to be acceptable based on the infrequent use of the Required Action and the small incremental effect on plant risk (Ref. 3). If one PORV is restored and one PORV remains inoperable, then the plant will be in Condition B with the time clock started at the original declaration of having two PORVs inoperable.

F.1 and F.2

If two PORVs are inoperable and not are capable of being manually cycled and are not ~~If no PORVs are~~ restored within the Completion Time, then 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 Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging plant systems. Similarly, the Completion Time of 12 hours to reach MODE 4 is reasonable, considering that a plant can cool down within that time frame on one safety system train. In MODES 4 and 5, maintaining PORV OPERABILITY may be required. See LCO 3.4.12.

BASES

ACTIONS (continued)

GF.1 and G.2

If two block valves are inoperable, it is necessary to restore at least one block valve to OPERABLE status within 82 hours. The Condition is modified by a Note stating it is not applicable if the second block valve is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one block valve is inoperable for any reason and the second block valve is discovered to be inoperable, or if both block valves are discovered to be inoperable at the same time. In the event of a loss of feedwater, the PORVs would be used to remove core heat. In order to minimize the consequences of a loss of feedwater while two block valves are inoperable, Required Action G.2 requires that LCO 3.7.5, "Auxiliary Feedwater System," be verified to be met within 1 hour. The inoperability of two block valves during the 8 hour Completion Time has been shown to be acceptable based on the infrequent use of the Required Actions and the small incremental effect on plant risk (Ref. 3).~~The Completion Time is reasonable based on the small potential for challenges to the system during this time and provides the operator time to correct the situation.~~

HG.1 and HG.2

If the Required Actions and associated Completion Times of Condition FE or GF are not met, then the plant must be brought to a MODE in which the LCO does not apply. The plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging safety systems. Similarly, the Completion Time of 12 hours to reach MODE 4 is reasonable considering that a plant can cool down within that time frame on one safety system train. In MODES 4 and 5, maintaining PORV OPERABILITY may be required. See LCO 3.4.12.

SURVEILLANCE REQUIREMENTS

SR 3.4.11.1

Block valve cycling verifies that it can be closed if necessary. The basis for the Frequency of [92 days] is the ASME Code (Ref. 43).

This SR is modified by two Notes. Note 1 modifies this SR by stating that this SR is not required to be performed with the block valve closed in accordance with the Required Actions of this LCO. Opening the block valve in this condition increases the risk of an unisolable leak from the RCS since the PORV is already inoperable. Note 2 modifies this SR to allow entry into and operation in MODE 3 prior to performing the SR.

This allows the test to be performed in MODE 3 under operating temperature and pressure conditions, prior to entering MODE 1 or 2. [In accordance with Reference 54, administrative controls require this test be performed in MODE 3 or 4 to adequately simulate operating temperature and pressure effects on PORV operation.]

SR 3.4.11.2

SR 3.4.11.2 requires complete cycling of each PORV. PORV cycling demonstrates its function. The Frequency of [18] months is based on a typical refueling cycle and industry accepted practice.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Note modifies this SR to allow entry into and operation in MODE 3 prior to performing the SR. This allows the test to be performed in MODE 3 under operating temperature and pressure conditions, prior to entering MODE 1 or 2. [In accordance with Reference 4, administrative controls require this test be performed in MODE 3 or 4 to adequately simulate operating temperature and pressure effects on PORV operation.]

[SR 3.4.11.3

Operating the solenoid air control valves and check valves on the air accumulators ensures the PORV control system actuates properly when called upon. The Frequency of [18] months is based on a typical refueling cycle and the Frequency of the other surveillances used to demonstrate PORV OPERABILITY.]

[SR 3.4.11.4

This Surveillance is not required for plants with permanent 1E power supplies to the valves. The test demonstrates that emergency power can be provided and is performed by transferring power from the normal supply to the emergency supply and cycling the valves. The Frequency of [18] months is based on a typical refueling cycle and industry accepted practice.]

REFERENCES

1. NUREG-0737, Paragraph II, G.I, November 1980.

2. Inspection and Enforcement (IE) Bulletin 79-05B, April 21, 1979.

3. WCAP-16125-NP-A, “Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown,” Revision 2, August 2010.

~~3~~4. ASME Code for Operation and Maintenance of Nuclear Power Plants.

[~~4~~5. Generic Letter 90-06, "Resolution of Generic Issue 70, 'Power-Operated Relief Valve and Block Valve Reliability,' and Generic Issue 94, 'Additional Low-Temperature Overpressure for Light-Water Reactors,' Pursuant to 10 CFR 50.54(f)," June 25, 1990.]

BASES

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment and an increase in containment pressure and temperature, requiring the operation of the containment spray trains and containment cooling trains.

In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Thus, the Containment Spray and Containment Cooling systems are not required to be OPERABLE in MODES 5 and 6.

ACTIONS

A.1

----------REVIEWER'S NOTE----------
Utilization of the 7 day Completion Time for Required Action A.1 is dependent on the licensee adopting CE NPSD-1045-A (Ref. 6) and meeting the requirements of the Topical Report and the associated Safety Evaluation. Otherwise, a 72 hour Completion Time applies.

With one containment spray train inoperable, the inoperable containment spray train must be restored to OPERABLE status within [7] days. In this Condition, the remaining OPERABLE spray and cooling trains are adequate to perform the iodine removal and containment cooling functions. The [7] day Completion Time takes into account the redundant heat removal capability afforded by the Containment Spray System, reasonable time for repairs, and the findings of Ref. 6.

~~B.1 and B.2~~

~~If the inoperable containment spray train cannot be restored to OPERABLE status 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 84 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. The extended interval to reach MODE 5 allows additional time for the restoration of the containment spray train and is reasonable when considering that the driving force for a release of radioactive material from the Reactor Coolant System is reduced in MODE 3.~~

BASES

ACTIONS (continued)

B.1

With one required containment cooling train inoperable, the inoperable containment cooling train must be restored to OPERABLE status within 7 days. The components in this degraded condition are capable of providing greater than 100% of the heat removal needs (for the condition of one containment cooling train inoperable) after an accident. The 7 day Completion Time was developed based on the same reasons as those for Required Action A.1.

C.1

With two required containment spray trains inoperable, at least one of the required containment spray trains must be restored to OPERABLE status within 24 hours. Both trains of containment cooling must be OPERABLE or Condition G is also entered. The Condition is modified by a Note stating it is not applicable if the second containment spray train is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one train is inoperable for any reason and the second train is discovered to be inoperable, or if both trains are discovered to be inoperable at the same time. In addition, LCO 3.7.11, "CREACS," must be verified to be met within 1 hour. The components in this degraded condition are capable of providing greater than 100% of the heat removal needs after an accident. The Completion Time is based on Reference 7 which demonstrated that the 24 hour Completion Time is acceptable based on the redundant heat removal capabilities afforded by the Containment Cooling System, the iodine removal capability of the Control Room Emergency Air Cleanup System, the infrequent use of the Required Action, and the small incremental effect on plant risk.

~~C.1~~

~~With one required containment cooling train inoperable, the inoperable containment cooling train must be restored to OPERABLE status within 7 days. The remaining OPERABLE containment spray and cooling components provide iodine removal capabilities and are capable of providing at least 100% of the heat removal needs after an accident. The 7 day Completion Time was developed taking into account the redundant heat removal capabilities afforded by combinations of the Containment Spray System and Containment Cooling System and the low probability of a DBA occurring during this period.~~

D.1 and D.2

With one containment spray train and one containment cooling train inoperable, one of the required containment cooling trains must be restored to OPERABLE status within 72 hours. The components in this degraded condition provide iodine removal capabilities and are capable of providing at least 100% of the heat removal needs after an accident. The 72 hour Completion Time was developed taking into account the redundant heat removal capabilities afforded by combinations of the Containment Spray System and Containment Cooling System, the iodine removal function of the Containment Spray System, and the low probability of a DBA occurring during this period.

E.1

With two required containment cooling trains inoperable, one of the required containment cooling trains must be restored to OPERABLE status within 72 hours. The components in this degraded condition provide iodine removal capabilities and are capable of providing at least 100% of the heat removal needs after an accident. The 72 hour Completion Time was developed taking into account the redundant heat removal capabilities afforded by combinations of the Containment Spray System and Containment Cooling System, the iodine removal function of the Containment Spray System, and the low probability of a DBA occurring during this period.

BASES

ACTIONS (continued)

F.1 and F.2

If the Required Actions and associated Completion Times ~~of Condition C, D, or E of this LCO~~ 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 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

G.1

With ~~two containment spray trains or~~ any combination of three or more Containment Spray System and Containment Cooling System trains inoperable, the unit is in a condition outside the accident analysis. Therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.6.6A.1

Verifying the correct alignment for manual, power operated, and automatic valves in the containment spray flow path provides assurance that the proper flow paths will exist for Containment Spray System operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these were verified to be in the correct position prior to being secured. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This SR does not require any testing or valve manipulation. Rather, it involves verifying that those valves outside containment and capable of potentially being mispositioned are in the correct position.

SR 3.6.6A.2

Operating each containment cooling train fan unit for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected and corrective action taken. The 31 day Frequency of this SR was developed considering the known reliability of the fan units and controls, the two train redundancy available, and the low probability of a significant degradation of the containment cooling train occurring between surveillances and has been shown to be acceptable through operating experience.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6A.3

Verifying a service water flow rate of ≥ [2000] gpm to each cooling unit provides assurance that the design flow rate assumed in the safety analyses will be achieved (Ref. 2). Also considered in selecting this Frequency were the known reliability of the Cooling Water System, the two train redundancy, and the low probability of a significant degradation of flow occurring between surveillances.

[SR 3.6.6A.4

Verifying that the containment spray header piping is full of water to the [100] ft level minimizes the time required to fill the header. This ensures that spray flow will be admitted to the containment atmosphere within the time frame assumed in the containment analysis. The 31 day Frequency is based on the static nature of the fill header and the low probability of a significant degradation of water level in the piping occurring between surveillances.]

SR 3.6.6A.5

Verifying that each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by the ASME Code (Ref. 8~~7~~). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. The Frequency of this SR is in accordance with the Inservice Testing Program.

BASES

REFERENCES

1. 10 CFR 50, Appendix A, GDC 38, GDC 39, GDC 40, GDC 41, GDC 42, and GDC 43.

2. FSAR, Section [ ].

3. FSAR, Section [ ].

4. FSAR, Section [ ].

5. FSAR, Section [ ].

6. CE NPSD-1045-A, “CEOG Joint Application Report for Modification to the Containment Spray System Technical Specifications," March 2000.

7. WCAP-16125-NP-A, “Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown,” Revision 2, August 2010.

8~~7~~. ASME Code for Operation and Maintenance of Nuclear Power Plants.

BASES

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could lead to fission product release to containment that leaks to the shield building. The large break LOCA, on which this system's design is based, is a full power event. Less severe LOCAs and leakage still require the system to be OPERABLE throughout these MODES. The probability and severity of a LOCA decrease as core power and Reactor Coolant System pressure decrease. With the reactor shut down, the probability of release of radioactivity resulting from such an accident is low.

In MODES 5 and 6, the probability and consequences of a DBA are low due to the pressure and temperature limitations in these MODES. Under these conditions, the Filtration System is not required to be OPERABLE.

ACTIONS

A.1

With one SBEACS train inoperable, the inoperable train must be restored to OPERABLE status within 7 days. The components in this degraded condition are capable of providing 100% of the iodine removal needs after a DBA. The 7 day Completion Time is based on consideration of such factors as the availability of the OPERABLE redundant SBEACS train and the low probability of a DBA occurring during this period.

B.1 and B.2

If two SBEACS trains are inoperable, at least one SBEACS train must be returned to OPERABLE status within 24 hours. The Condition is modified by a Note stating it is not applicable if the second SBEACS train is intentionally declared inoperable. The Condition does not apply voluntary removal of redundant systems or components from service. The Condition is only applicable if one train is inoperable for any reason and the second train is discovered to be inoperable, or if both trains are discovered to be inoperable at the same time. In addition, at least one train of containment spray must be verified to be OPERABLE within 1 hour. In the event of an accident, containment spray reduces the potential radioactive release from the containment, which reduces the consequences of the inoperable SBEACS trains. The Completion Time is based on Reference 4 which demonstrated that the 24 hour Completion Time is acceptable based on the infrequent use of the Required Actions and the small incremental effect on plant risk.

C~~B~~.1 and C~~B~~.2

If the SBEACS train cannot be restored to OPERABLE status 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

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.8.5

The SBEACS train flow rate is verified ≥ [ ] cfm to ensure that the flow rate is adequate to "pull down" the shield building pressure as required. This test also will verify the proper functioning of the fans, dampers, filters, absorbers, etc., when this SR is performed in conjunction with SR 3.6.11.4.

The [18] month on a STAGGERED TEST BASIS Frequency is consistent with the Regulatory Guide 1.52 (Ref. ~~4~~5) guidance.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 41.

2. FSAR, Section [ ].

3. FSAR, Section [ ].

4. WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 2, August 2010.

5~~4~~. Regulatory Guide 1.52, Revision [2].

BASES

ACTIONS (continued)

b. The fact that, even with no ICS train in operation, almost the same amount of iodine would be removed from the containment atmosphere through absorption by the Containment Spray System, and

c. The fact that the Completion Time is adequate to make most repairs.

B.1 and B.2

If two ICS trains are inoperable, at least one ICS train must be returned to OPERABLE status within 24 hours. The Condition is modified by a Note stating it is not applicable if the second ICS train is intentionally declared inoperable. The Condition does notapply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one train is inoperable for any reason and the second train is discovered to be inoperable, or if both trains are discovered to be inoperable at the same time. In addition, at least one train of containment spray must be verified to be OPERABLE within 1 hour. In the event of an accident, containment spray reduces the potential radioactive release from the containment, which reduces the consequences of the inoperable ICS trains. The Completion Time is based on Reference 5 which demonstrated that the 24 hour Completion Time is acceptable based on the infrequent use of the Required Actions and the small incremental effect on plant risk.

C~~B~~.1 and C~~B~~.2

If the ICS train(s) cannot be restored to OPERABLE status 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 power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.10.1

Operating each ICS train for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. For systems with heaters, operation with the heaters on (automatic heater cycling to maintain temperature) for ≥ 10 continuous hours eliminates moisture on the

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.10.3

The automatic startup test verifies that both trains of equipment start upon receipt of an actual or simulated test signal. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. Furthermore, the Frequency was developed considering that the system equipment OPERABILITY is demonstrated on a 31 day Frequency by SR 3.6.10.1.

[SR 3.6.10.4

The ICS filter bypass dampers are tested to verify OPERABILITY. The dampers are in the bypass position during normal operation and must reposition for accident operation to draw air through the filters. The [18] month Frequency is considered to be acceptable based on the damper reliability and design, the mild environmental conditions in the vicinity of the dampers, and the fact that operating experience has shown that the dampers usually pass the Surveillance when performed at the [18] month Frequency.]

REFERENCES

1. 10 CFR 50, Appendix A, GDC 41, GDC 42, and GDC 43.

2. FSAR, Section [ ].

3. Regulatory Guide 1.52, Revision [2].

4. FSAR, Section [ ].

5. WCAP-16125-NP-A, “Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown,” Revision 2, August 2010.

BASES

ACTIONS

A.1

With one CREACS train inoperable, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CREACS subsystem is adequate to perform control room radiation protection function. However, the overall reliability is reduced because a single failure in the OPERABLE CREACS train could result in loss of CREACS function. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and the ability of the remaining train to provide the required capability.

B.1, B.2, and B.3

----------REVIEWER'S NOTE----------
Adoption of Condition B is dependent on a commitment from the licensee to have written procedures available describing compensatory measures to be taken in the event of an intentional or unintentional entry into Condition B.

If the control room boundary is inoperable in MODES 1, 2, 3, and 4, the CREACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE control room boundary within 24 hours. During the period that the control room boundary is inoperable, appropriate compensatory measures (consistent with the intent of GDC 19) should be utilized to protect control room operators from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the control room boundary.

~~C.1 and C.2~~

~~If the inoperable CREACS or control room boundary cannot be restored to OPERABLE status within the associated Completion Time in MODE 1, 2, 3, or 4, the unit must be placed in a MODE that minimizes the accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.~~

BASES

ACTIONS (continued)

C.1, C.2, and C.3

If both CREACS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable control room boundary (i.e., Condition B), at least one CREACS train must be returned to OPERABLE status within 24 hours. The Condition is modified by a Note stating it is not applicable if the second CREACS train is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one train is inoperable for any reason and the second train is discovered to be inoperable, or if both trains are discovered to be inoperable at the same time. During the period that the CREACS trains are inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from potential hazards while both trains of CREACS are inoperable. In the event of a DBA, the mitigating actions will reduce the consequences of radiological exposures to the CRE occupants.

Specification 3.4.16, "RCS Specific Activity," allows limited operation with the reactor coolant system (RCS) activity significantly greater than the LCO limit. This presents a risk to the plant operator during an accident when all CREACS trains are inoperable. Therefore, it must be verified within 1 hour that LCO 3.4.16 is met. This Required Action does not require additional RCS sampling beyond that normally required by LCO 3.4.16.

At least one CREACS train must be returned to OPERABLE status within 24 hours. The Completion Time is based on Reference 3 which demonstrated that the 24 hour Completion Time is acceptable based on on the infrequent use of the Required Actions and the small incremental effect on plant risk.

D.1 and D.2

Required Action D.1 is modified by a Note indicating to place the system in the emergency radiation protection mode if the automatic transfer to emergency mode is inoperable.

In MODE 5 or 6, or during movement of [recently] irradiated fuel assemblies, if Required Action A.1 cannot be completed within the required Completion Time, the OPERABLE CREACS train must be immediately placed in the emergency mode of operation. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure will be readily detected.

An alternative to Required Action D.1 is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel assemblies to a safe position.

E.1

When [in MODES 5 and 6, or] during movement of [recently] irradiated fuel assemblies, with two CREACS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

~~F.1~~

~~If both CREACS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable control room boundary (i.e., Condition B), the CREACS may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.~~

F.1 and F.2

If the inoperable CREACS or control room boundary cannot be restored to OPERABLE status within the associated Completion Time in MODE 1, 2, 3, or 4, the unit must be placed in a MODE that minimizes the accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1

Standby systems should be checked periodically to ensure that they function properly. Since the environment and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system.

Monthly heater operations dry out any moisture accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on the known reliability of the equipment, and the two train redundancy available.

SR 3.7.11.2

This SR verifies that the required CREACS testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The [VFTP] includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the [VFTP].

SR 3.7.11.3

This SR verifies each CREACS train starts and operates on an actual or simulated actuation signal. The Frequency of [18] months is consistent with that specified in Reference 4~~3~~.

SR 3.7.11.4

This SR verifies the integrity of the control room enclosure and the assumed inleakage rates of potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper function of the CREACS. During the emergency radiation state of the emergency mode of operation, the CREACS is designed to pressurize the control room ≥ [0.125] inches water gauge positive pressure with respect to adjacent areas in order to prevent unfiltered inleakage. The CREACS is designed to maintain this positive pressure with one train at an emergency ventilation flow rate of [3000] cfm. The Frequency of [18] months on a STAGGERED TEST BASIS is consistent with the guidance provided in NUREG-0800, Section 6.4 (Ref. 5~~4~~).

BASES

REFERENCES

1. FSAR, Section [9.4].

2. FSAR, Chapter [15].

3. WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 2, August 2010.

4~~3~~. Regulatory Guide 1.52, Rev. [2].

5~~4~~. NUREG-0800, Section 6.4, Rev. 2, July 1981.

BASES

APPLICABILITY

In MODES 1, 2, 3, 4, [5, and 6,] and during movement of [recently] irradiated fuel assemblies [(i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)], the CREATCS must be OPERABLE to ensure that the control room temperature will not exceed equipment OPERABILITY requirements following isolation of the control room.

In MODES 5 and 6, CREATCS may not be required for those facilities which do not require automatic control room isolation.

ACTIONS

A.1

With one CREATCS train inoperable, action must be taken to restore OPERABLE status within 30 days. In this Condition, the remaining OPERABLE CREATCS train is adequate to maintain the control room temperature within limits. The 30 day Completion Time is reasonable, based on the low probability of an event occurring requiring control room isolation, consideration that the remaining train can provide the required capabilities, and the alternate safety or nonsafety related cooling means that are available.

B.1

If two CREATCS trains are inoperable, at least one CREATCS train must be returned to OPERABLE status within 24 hours. The Condition is modified by a Note stating it is not applicable if the second CREATCS train is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one train is inoperable for any reason and the second train is discovered to be inoperable, or if both trains are discovered to be inoperable at the same time. The Completion Time is based on Reference 2 which demonstrated that the 24 hour Completion Time is acceptable based on the infrequent use of the Required Action and the small incremental effect on plant risk.

C~~B~~.1 and C~~B~~.2

In MODE 1, 2, 3, or 4, when one or more CREATCS trains ~~Required Action A.1~~ cannot be ~~completed~~ restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes the accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

[D~~C~~.1 and D~~C~~.2

In MODE 5 or 6, or during movement of [recently] irradiated fuel assemblies, when Required Action A.1 cannot be completed within the required Completion Time, the OPERABLE CREATCS train must be placed in operation immediately. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure will be readily detected.

An alternative to Required Action D~~C~~.1 is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel assemblies to a safe position.]

BASES

ACTIONS (continued)

[~~E~~D.1

In [MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies, with two CREATCS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.]

~~E.1~~

~~If both CREATCS trains are inoperable in MODE 1, 2, 3, or 4, the CREATCS may not be capable of performing the intended function and the unit is in a condition outside the accident analysis. Therefore, LCO 3.0.3 must be entered immediately.~~

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

This SR verifies that the heat removal capability of the system is sufficient to meet design requirements. This SR consists of a combination of testing and calculations. An [18] month Frequency is appropriate, since significant degradation of the CREATCS is slow and is not expected over this time period.

REFERENCES

1. FSAR, Section [6.4].

2. WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 2, August 2010.

BASES

ACTIONS (continued)

If the ECCS pump room boundary is inoperable, the ECCS PREACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE ECCS pump room boundary within 24 hours. During the period that the ECCS pump room boundary is inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 60, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the ECCS pump room boundary.

----------REVIEWER'S NOTE----------
Condition C is not applicable to plant designs that rely on the ECCS PREACS to provide temperature control of the ECCS pump rooms. Reference 6 did not evaluate the effect of two inoperable ECCS PREACS trains on the ECCS pump room cooling function.

C.1

With two ECCS PREACS trains inoperable for reasons other than an inoperable boundary, action must be taken to restore at least one ECCS PREACS train to OPERABLE status within 24 hours. The Condition is modified by a Note stating it is not applicable if the second ECCS PREACS train is intentionally made inoperable. The Required Action is not intended for voluntary removal of redundant systems or components from service. The Required Action is only applicable if one train is inoperable for any reason and the second train is found to be inoperable, or if both trains are found to be inoperable at the same time. The Completion Time is based on Reference 6 which demonstrated that the 24 hour Completion Time is acceptable based on the low frequency of the potential challenge and the small incremental risk associated with continued operation.

D~~C~~.1 and D~~C~~.2

If the ECCS PREACS train or ECCS pump room boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be in a MODE in which the LCO does not apply. To achieve

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.13.2

This SR verifies that the required ECCS PREACS testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The [VFTP] includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the [VFTP].

SR 3.7.13.3

This SR verifies that each ECCS PREACS train starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with that specified in Regulatory Guide 1.52 (Ref. 4).

SR 3.7.13.4

This SR verifies the integrity of the ECCS pump room enclosure. The ability of the ECCS pump room to maintain a negative pressure, with respect to potentially uncontaminated adjacent areas, is periodically tested to verify proper function of the ECCS PREACS. During the post accident mode of operation, the ECCS PREACS is designed to maintain a slight negative pressure in the ECCS pump room with respect to adjacent areas to prevent unfiltered LEAKAGE. The ECCS PREACS is designed to maintain this negative pressure at a flow rate of ≤ [20,000] cfm from the ECCS pump room. The Frequency of [18] months is consistent with the guidance provided in the NUREG-0800, Section 6.5.1 (Ref. 7~~6~~).

This test is conducted with the tests for filter penetration; thus, an [18] month Frequency, on a STAGGERED TEST BASIS is consistent with other filtration SRs.

[SR 3.7.13.5

Operating the ECCS PREACS filter bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the bypass damper is verified if it can be closed. An [18] month Frequency is consistent with that specified in Reference 4.]

BASES

REFERENCES

1. FSAR, Section [6.5.1].

2. FSAR, Section [9.4.5].

3. FSAR, Section [15.6.5].

4. Regulatory Guide 1.52, Rev. [2].

5. 10 CFR 100.11.

6. WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 2, August 2010.

7~~6~~. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.

BASES

ACTIONS (continued)

C.1 and C.2

With two PREACS trains inoperable for reasons other than an inoperable boundary, action must be taken to restore at least one PREACS train to OPERABLE status within 24 hours. The Condition is modified by a Note stating it is not applicable if the second PREACS train is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one train is inoperable for any reason and the second train is discovered to be inoperable, or if both trains are discovered to be inoperable at the same time. In addition, at least one train of containment spray must be verified to be OPERABLE within 1 hour. In the event of an accident, containment spray reduces the potential radioactive release from the containment which reduces the consequences of the inoperable PREACS trains. The Completion Time is based on Reference 6 which demonstrated that the 24 hour Completion Time is acceptable based on the infrequent use of the Required Actions and the small incremental effect on plant risk.

D~~C~~.1 and D~~C~~.2

If the inoperable PREACS train or penetration room boundary 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 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.15.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system.

Monthly heater operation dries out any moisture that may have accumulated in the charcoal as a result of humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available.

BASES

SURVEILLANCE REQUIREMENTS (continued)

[SR 3.7.15.4

This SR verifies the integrity of the penetration room enclosure. The ability of the penetration room to maintain negative pressure, with respect to potentially uncontaminated adjacent areas, is periodically tested to verify proper function of the PREACS. During the post accident mode of operation, PREACS is designed to maintain a slightly negative pressure at a flow rate of ≤ [3000] cfm in the penetration room with respect to adjacent areas to prevent unfiltered LEAKAGE. The Frequency of [18] months is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 7~~6~~).]

[The minimum system flow rate maintains a slight negative pressure in the penetration room area and provides sufficient air velocity to transport particulate contaminants, assuming only one filter train is operating.

The number of filter elements is selected to limit the flow rate through any individual element to about [1000] cfm. This may vary based on filter housing geometry. The maximum limit ensures that flow through, and pressure drop across, each filter element is not excessive.

The number and depth of the adsorber elements ensures that, at the maximum flow rate, the residence time of the air stream in the charcoal bed achieves the desired adsorption rate. At least a [0.125] second residence time is necessary for an assumed [99]% efficiency.

The filters have a certain pressure drop at the design flow rate when clean. The magnitude of the pressure drop indicates acceptable performance, and is based on manufacturer's recommendations for the filter and adsorber elements at the design flow rate. An increase in pressure drop or decrease in flow indicates that the filter is being loaded or is indicative of other problems with the system.

This test is conducted with the tests for filter penetration; thus, an [18] month Frequency on a STAGGERED TEST BASIS consistent with other filtration SRs.]

[SR 3.7.15.5

Operating the PREACS filter bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the PREACS filter bypass damper is verified if it can be closed. An [18] month Frequency is consistent with that specified in Reference 4.]

BASES

REFERENCES

1. FSAR, Section [6.5.1].

2. FSAR, Section [9.4.5].

3. FSAR, Section [15.6.5].

4. Regulatory Guide 1.52 Rev. [2].

5. 10 CFR 100.11.

6. WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 2, August 2010.

7~~6~~. NUREG-0800, Section 6.5.1.