TSTF
TECHNICAL SPECIFICATIONS TASK FORCE
A JOINT OWNERS GROUP ACTIVITY

August 5, 2008

TSTF-08-13
PROJ0753

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

SUBJECT: TSTF-426, Revision 1, "Revise or Add Actions to Preclude Entry into LCO 3.0.3 - RITSTF Initiatives 6b & 6c"

Dear Sir or Madam:

Enclosed for NRC review is Revision 1 of TSTF-426, "Revise or Add Actions to Preclude Entry into LCO 3.0.3 - RITSTF Initiatives 6b & 6c."

TSTF-426, Revision 0 was submitted to the NRC on August 30, 2004 (ADAMS Accession No. ML052990318). On November 13, 2004, the NRC provided an RAI on the TSTF to which the TSTF responded on April 27, 2005. The Notice for Comment on TSTF-426, Revision 0, was published in the Federal Register on July 20, 2006 and the TSTF provided comments on August 21, 2006. In a public meeting held on January 18, 2007 between the NRC and the TSTF, it was agreed that, based on comments received, TSTF-426 should be revised to resolve differences between the Traveler and Revision 0 of WCAP-16125-NP, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent plant Shutdown." WCAP-16125-NP, Revision 1, was submitted to the NRC on January 7, 2008. Revision 1 of TSTF-426 is consistent with the Topical Report.

Revision 0 of TSTF-426 was not assessed NRC review fees. We request that NRC review of the Revision 1 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 management 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.

The TSTF requests that the Traveler be made available under the Consolidated Line Item Improvement Process.

11921 Rockville Pike, Suite 100, Rockville, MD 20852
Phone: 301-984-4400, Fax: 301-984-7600
Email: tstf@excelservices.com
Administered by EXCEL Services Corporation

PWROG
PWR Owners Group
BWR OWNERS' GROUP

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

Bert Yates (PWROG/W)

John Messina (BWROG)

David Bice (PWROG/CE)

Reene' Gambrell (PWROG/B&W)

Enclosure

cc: Robert Elliott, Technical Specifications Branch, NRC
Matthew Hamm, Technical Specifications Branch, NRC

Technical Specification 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

Industry Contact: Dana Millar, (601) 368-5445, DMILLAR@entergy.com

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.

OG Revision 0 Revision Status: Closed

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

TSTF Revision 1 Revision Status: Active

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

Affected Technical Specifications

Ref. 3.4.9 Bases	Pressurizer	
	Change Description:	Relabeled D
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
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. 3.5.1 Bases	SITs	
Action 3.5.1.C	SITs	
	Change Description:	New Action
Action 3.5.1.C	SITs	
	Change Description:	Relabeled D
Action 3.5.1.C Bases	SITs	
	Change Description:	Relabeled D
Action 3.5.1.C Bases	SITs	
	Change Description:	New Action
Action 3.5.1.D	SITs	
	Change Description:	Deleted
Action 3.5.1.D Bases	SITs	
	Change Description:	Deleted

Ref. 3.5.2 Bases	ECCS - Operating
Action 3.5.2.A Bases	ECCS - Operating
Action 3.5.2.B	ECCS - Operating Change Description: New Action
Action 3.5.2.B	ECCS - Operating Change Description: Relabeled C
Action 3.5.2.B Bases	ECCS - Operating Change Description: New Action
Action 3.5.2.B Bases	ECCS - Operating Change Description: Relabeled C
Action 3.5.2.C	ECCS - Operating Change Description: Relabeled D
Action 3.5.2.C Bases	ECCS - Operating Change Description: Relabeled D
Action 3.5.2.D	ECCS - Operating
Action 3.5.2.D Bases	ECCS - Operating
Ref. 3.6.6A Bases	Containment Spray and Cooling Systems
Ref. 3.6.6B Bases	Containment Spray and Cooling Systems Change Description: Deleted
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 3.6.6B.F	Containment Spray and Cooling Systems
	Change Description: Relabeled G
Action 3.6.6A.F	Containment Spray and Cooling Systems
	Change Description: New
Action 3.6.6A.F	Containment Spray and Cooling Systems
	Change Description: Relabeled G
Action 3.6.6A.F Bases	Containment Spray and Cooling Systems
	Change Description: New
Action 3.6.6A.F Bases	Containment Spray and Cooling Systems
	Change Description: Relabeled G
Action 3.6.6B.F Bases	Containment Spray and Cooling Systems
	Change Description: Relabeled G
Action 3.6.6A.G	Containment Spray and Cooling Systems
	Change Description: Deleted
Action 3.6.6B.G	Containment Spray and Cooling Systems
	Change Description: Deleted
Action 3.6.6B.G Bases	Containment Spray and Cooling Systems
	Change Description: Deleted
Action 3.6.6A.G Bases	Containment Spray and Cooling Systems
	Change Description: Deleted
SR 3.6.6B.5 Bases	Containment Spray and Cooling Systems
	Change Description: Deleted
SR 3.6.6A.5 Bases	Containment Spray and Cooling Systems
Ref. 3.6.8 Bases	SBEACS
Action 3.6.8.B	SBEACS
	Change Description: Relabeled C
Action 3.6.8.B	SBEACS
	Change Description: New
Action 3.6.8.B Bases	SBEACS
	Change Description: Relabeled C
Action 3.6.8.B Bases	SBEACS
	Change Description: New
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:	Relabeled C
Action 3.6.10.B	ICS	
	Change Description:	New
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	
	Change Description:	Deleted
Action 3.7.11.C Bases	CREACS	
	Change Description:	Deleted
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
Action 3.7.12.B Bases	CREATCS	
	Change Description:	Relabeled C
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
Action 3.7.12.E Bases	CREATCS	
	Change Description:	Relabeled B

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:	Relabled D
Action 3.7.13.C Bases	ECCS PREACS	
	Change Description:	New
SR 3.7.13.4 Bases	ECCS PREACS	
Ref. 3.7.15 Bases	PREACS	
Action 3.7.15.C	PREACS	
	Change Description:	New Action
Action 3.7.15.C	PREACS	
	Change Description:	Relabeled D
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	

1.0 Description

Topical Report WCAP-16125, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent plant Shutdown," (Ref. 1) justifies modifications to various Technical Specification (TS) Action Statements for conditions that result in 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 LCO 3.0.3 entry to a risk-informed action based on the system's risk significance. In most instances, a Completion Time (CT) of 24 hours is justified.

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 Proposed Change

The Traveler revises the following Specifications in NUREG-1432 to preclude immediate entry into LCO 3.0.3:

1. TS 3.4.9, Pressurizer, for the condition of the required pressurizer heaters inoperable,

2. TS 3.4.11, Pressurizer PORVs, for the condition of two inoperable PORVs that cannot be manually cycled,

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

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

5. TS 3.6.6.A, Containment Spray and Cooling Systems, for the conditions of two containment spray trains inoperable and for two containment spray and two containment cooler trains inoperable,

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

7. TS 3.6.8, Shield Building Exhaust Air Cleanup System (SPEACS), for the condition of two SBEACS trains inoperable. In addition, the end state is revised from Mode 5 to Mode 4,

8. TS 3.6.10, Iodine Cleanup System (ICS), for the condition of two ICS trains inoperable. In addition, the end state is revised from Mode 5 to Mode 4,

9. 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,

10. 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,

11. TS 3.7.13, ECCS Penetration Room Exhaust Air Cleanup System (PREACS), for the condition of two ECCS PREACS trains inoperable. In addition, the end state is revised from Mode 5 to Mode 4, and

12. TS 3.7.15, PREACS, for the condition of two PREACS trains inoperable. In addition, the end state is revised from Mode 5 to Mode 4.

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

3.0 Background

In response to the Nuclear Regulatory Commission (NRC's) initiative to improve plant safety by developing risk-informed TSs, the Industry has undertaken a program for defining and obtaining risk-informed TS modifications. WCAP-16125 provides technical justification for the modification of various TSs to define and/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 varying from 4 hours to 72 hours. In addition, the report proposes the modification of some of the TS Actions to allow a Mode 4 vice Mode 5 end state when the Required Actions and associated Completion Times cannot be met.

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.

(c) Providing for increased flexibility in scheduling and performing maintenance and surveillance activities.

(d) Providing explicit guidance where none currently exists.

4.0 Technical Analysis

Topical Report WCAP-16125 (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 system or function is unavailable. The justification considered both deterministic and risk-informed evaluations and compared the results to the relevant regulatory guidance. That justification will not be repeated here.

In addition to proposing changes to the TS Actions to preclude entry into LCO 3.0.3, the Topical Report in some cases proposed changes to the TS "end states," i.e., the final Mode or other specified Condition specified in the Required Actions to which the plant must be brought if the LCO is not met.

The Topical Report proposes changes to plant TS on Boration Systems. This system does not appear in the Improved Standard Technical Specifications and, therefore, the proposed changes do not appear in this Traveler.

TS 3.4.9, Pressurizer
TS 3.4.9 does not contain a Condition for all [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 all [required] groups of pressurizer heaters inoperable which requires restoration of all but one pressurizer heater to OPERABLE status within 24 hours.

TS 3.4.11, Pressurizer PORVs
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 within 1 hour and to restore at least one PORV to OPERABLE status within 8 hours. 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, is modified to allow 8 hours instead of 2 hours to restore one block valve to OPERABLE status when both block valves are inoperable. Subsequent Actions are renumbered.

The Topical Report refers to "PORVs that are not expected to be isolable following a demand." This is equivalent to the TS condition of "not capable of being manually cycled."

The Topical Report states that the changes to Condition E are not applicable to PORVs that are leaking, and that cannot be isolated by block valves, or to PORVs that are not expected to be isolable following a demand. As discussed in the Topical Report, the LCO Bases state that a leaking PORV is inoperable. Therefore, Actions B or E would apply. Both Actions require closing the associated block valve. If the block valve cannot be closed, an immediate plant shutdown is required. Therefore, the TS enforce the Topical Report conditions that in order to apply the revised Actions, a leaking PORV must be isolated by a block valve and that an inoperable PORV be isolable following a demand.

TS 3.5.1, Safety Injection Tanks (SITs)

TS 3.5.1, Condition D, states that with two or more SITs inoperable, enter LCO 3.0.3 immediately. The Conditions are modified to allow 24 hours to restore all but one SIT to OPERABLE status provided that LCO 3.5.2, "ECCS - Operating," is verified to be met within 1 hour. The order of the Conditions is revised so that if the Required Actions and associated Completion Times of any Actions are not met, the plant must be in Mode 3 in 6 hours and pressurizer pressure must be reduced to < [700] psia within 2 hours in order to exit the Applicability of the TS.

TS 3.5.2, Emergency Core Cooling System (ECCS) – Operating

TS 3.5.2 requires two ECCS trains to be OPERABLE. The Bases define an ECCS train as a LPSI subsystem and a HPSI subsystem. The Topical Report justifies a new Condition B for two LPSI subsystems inoperable for up to 24 hours provided that it is verified that LCO 3.5.1, "Safety Injection Tanks" is met within 1 hour.

The existing Condition D, which applies when there is less than 100% of the ECCS flow equivalent to a single OPERABLE train and requires immediate entry into LCO 3.0.3, is revised to exclude the new Condition B for two LPSI subsystems 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 3.6.6.A, Containment Spray and Cooling Systems

NUREG-1432 contains two containment spray and cooling system TS – one for plants that credit containment sprays for iodine removal (3.6.6.A) and one that plants that do not (3.6.6.B).

Specification 3.6.6.A is revised to add a new Condition C for two Containment Spray trains inoperable with a Required Action to restore at least one train within 72 hours. A new Condition F is added to address two containment spray trains and two containment cooling trains inoperable with a Required Action to restore at least one train of containment spray or containment cooling within 12 hours.

Conditions B and G are eliminated and Condition F (now G) are revised to provide a shutdown track for all other Conditions.

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 3.6.6.B, Containment Spray and Cooling Systems
NUREG-1432 contains two containment spray and cooling system TS – one for plants that credit containment sprays for iodine removal (3.6.6.A) and one that plants that do not (3.6.6.B).

A new Condition F is added to address two containment spray trains and two containment cooling trains inoperable with a Required Action to restore at least one train of containment spray or containment cooling within 12 hours.

Condition G is eliminated and Condition F (now G) are revised to provide a shutdown track for all other Conditions.

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.

The Topical Report notes that the impact of loss of recirculation cooling provided by containment spray and cooling is mitigated by procedures to refill the RWST. Licensees have such procedures through implementation of Severe Accident Management Guidance and no additional action is necessary.

TS 3.6.8, Shield Building Exhaust Air Cleanup System (SBEACS)
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.

Condition C, which applies when the Required Actions and associated Completion Times are not met, is modified to have a Mode 4 end state instead of a Mode 5 end state.

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)
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 provided that it is verified within 1 hour that at least one train of containment spray is Operable.

Condition C, which applies when the Required Actions and associated Completion Times are not met, is modified to have a Mode 4 end state instead of a Mode 5 end state.

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 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 verify that LCO 3.4.16, RCS Specific

Activity," is met within 1 hour. Condition F is revised to require restoring one CREACS train to OPERABLE status within 24 hours and moves Condition F to Condition C. Existing Condition C, now Condition F, which requires entering Mode 3 in 6 hours and Mode 5 in 36 hours, is modified to apply to the new Condition C.

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 for any reason. Condition E is revised to require restoring one CREATCS train to OPERABLE status within 24 hours and moves Condition E to Condition B. 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. These types of actions are already established at plants and no additional action is required. This Tier 3 recommendation is not discussed in the proposed Bases.

TS 3.7.13, ECCS Penetration Room Exhaust Air Cleanup System (PREACS)
The Topical Report justifies a 24 hour Completion Time when two ECCS PREACS trains are inoperable provided that at least one train of Control Room Emergency Air Cleanup System is verified to be Operable within 1 hour. A new Condition C is added. The subsequent Actions are renumbered.

The Topical Report also justified a change in the end state from Mode 5 to Mode 4.

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, PREACS
The Topical Report justifies a 24 hour Completion Time when two PREACS trains are inoperable provided that at least one train of containment spray is verified to be Operable within 1 hour. A new Condition C is added. The subsequent Actions are renumbered.

The Topical Report also justified a change in the end state from Mode 5 to Mode 4.

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

5.0 Regulatory Analysis

5.1 No Significant Hazards Consideration

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 increase the time the plant may operate without the ability to perform an assumed safety function. The analyses in WCAP-16125, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent plant Shutdown," Revision 0, September 2003, 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.

5.2 Applicable Regulatory Requirements/Criteria

Regulatory requirements are not specific regarding the actions to be followed when Technical Specification requirements are not met. Therefore, 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.

6.0 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 effluent 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.

7.0 References

1. WCAP-16125-NP, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent plant Shutdown," Revision 1, December 2007.

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. [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 Time of Condition B or C not met.	~~C~~D.1 Be in MODE 3. AND ~~C~~D.2 Be in MODE 4.	6 hours [12] hours

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. 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. Two block valves inoperable.	~~G~~F.1 Restore at least one block valve to OPERABLE status.	8~~2~~ hours

HG. Required Action and associated Completion Time of Condition GF not met.	HG.1	Be in MODE 3.	6 hours
	AND		
	HG.2	Be in MODE 4.	[12] hours

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.1 Safety Injection Tanks (SITs)

LCO 3.5.1 [Four] SITs shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with pressurizer pressure ≥ [700] psia.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SIT inoperable due to boron concentration not within limits. OR One SIT inoperable due to the inability to verify level or pressure.	A.1 Restore SIT to OPERABLE status.	72 hours
B. One SIT inoperable for reasons other than Condition A.	B.1 Restore SIT to OPERABLE status.	24 hours
C. Two or more SITs inoperable.	C.1 Verify LCO 3.5.2, "ECCS - Operating," is met. AND C.2 Restore all but one SIT to OPERABLE status.	1 hour 24 hours
D~~C~~. Required Action and associated Completion Time ~~of Condition A or B~~ not met.	D~~C~~.1 Be in MODE 3. AND D~~C~~.2 Reduce pressurizer pressure to < [700] psia.	6 hours 2 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~D. Two or more SITs inoperable.~~	~~D.1 Enter LCO 3.0.3.~~	~~Immediately~~

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS - Operating

LCO 3.5.2 Two ECCS trains shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with pressurizer pressure ≥ [1700] psia.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
-----REVIEWER'S NOTE----- The adoption of this Condition is contingent upon implementation of a program to perform a contemporaneous assessment of the overall impact on safety of proposed plant configurations prior to performing and during performance of maintenance activities that remove equipment from service. ----------		
A. One LPSI subsystem inoperable.	A.1 Restore LPSI subsystem to OPERABLE status.	7 days
B. Two LPSI subsystems inoperable.	B.1 Verify LCO 3.5.1, "Safety Injection Tanks," is met. AND B.2 Restore at least one LPSI subsystem to OPERABLE status.	1 hour 24 hours
~~B~~C. One or more ECCS trains inoperable for reasons other than	~~B~~C.1 Restore ECCS train(s) to OPERABLE status.	72 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
Condition A or B.		
~~C~~D. Required Action and associated Completion Time not met.	~~C~~D.1 Be in MODE 3. AND ~~C~~D.2 Reduce pressurizer pressure to < [1700] psia.	6 hours 12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~D~~E. Less than 100% of the ECCS flow equivalent to a single OPERABLE train available for reasons other than Condition B.	~~D~~E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	[Verify the following valves are in the listed position with power to the valve operator removed [and key locked in position]. Valve Number / Position / Function [ ] / [ ] / [ ] [ ] / [ ] / [ ] [ ] / [ ] / [ ]	12 hours]
SR 3.5.2.2	Verify each ECCS 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 3.5.2.3	[Verify ECCS piping is full of water.	31 days]
SR 3.5.2.4	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.5.2.5	[Verify each charging pump develops a flow of ≥ [36] gpm at a discharge pressure of ≥ [2200] psig.	In accordance with the Inservice Testing Program]

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. Two containment spray trains inoperable.	C.1 Restore at least one containment spray train to OPERABLE status.	72 hours
D. One containment spray train and one containment cooling train inoperable.	D.1 Restore containment spray train to OPERABLE status. OR D.2 Restore containment cooling train to OPERABLE status.	72 hours 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. Two containment spray trains and two containment cooling trains inoperable.	F.1 Restore at least one containment spray train to OPERABLE status. OR F.2 Restore at least one containment cooling train to OPERABLE status.	12 hours 12 hours
GF. Required Action and associated Completion Time ~~of Condition C, D, or E~~ not met.	GF.1 Be in MODE 3. AND GF.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

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6A.4	[Verify the containment spray piping is full of water to the [100] ft level in the containment spray header.	31 days]
SR 3.6.6A.5	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.6.6A.6	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months
SR 3.6.6A.7	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.6.6A.8	Verify each containment cooling train starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.6.6A.9	Verify each spray nozzle is unobstructed.	[At first refueling] AND 10 years

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. 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
CB. Required Action and Associated Completion Time not met.	CB.1 Be in MODE 3. AND CB.2 Be in MODE 54.	6 hours 1236 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

3.6.6B Containment Spray and Cooling Systems (Atmospheric and Dual)
(Credit not taken for iodine removal by the Containment Spray System)

LCO 3.6.6B 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. One containment cooling train inoperable.	B.1	Restore containment cooling train to OPERABLE status.	7 days
C. Two containment spray trains inoperable.	C.1	Restore at least one containment spray train to OPERABLE status.	72 hours
D. One containment spray train and one containment cooling train inoperable.	D.1	Restore containment spray train to OPERABLE status.	72 hours
	OR		
	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. Two containment spray trains and two containment cooling trains inoperable.	F.1 Restore at least one containment spray train to OPERABLE status. OR F.2 Restore at least one containment cooling train to OPERABLE status.	12 hours 12 hours
GF. Required Action and associated Completion Time ~~of Condition A, B, C, D, or E~~ not met.	GF.1 Be in MODE 3. AND GF.2 Be in MODE 5.	6 hours 36 hours
~~G. Any combination of three or more trains inoperable.~~	~~G.1 Enter LCO 3.0.3.~~	~~Immediately~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6B.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 3.6.6B.2	Operate each containment cooling train fan unit for ≥ 15 minutes.	31 days
SR 3.6.6B.3	Verify each containment cooling train cooling water	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6B.4	[Verify the containment spray piping is full of water to the [100] ft level in the containment spray header.	31 days]
SR 3.6.6B.5	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.6.6B.6	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to its correct position on an actual or simulated actuation signal.	[18] months
SR 3.6.6B.7	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.6.6B.8	Verify each containment cooling train starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.6.6B.9	Verify each spray nozzle is unobstructed.	[At first refueling] AND 10 years

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. 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
CB. Required Action and associated Completion Time not met.	CB.1 Be in MODE 3. AND CB.2 Be in MODE 54.	6 hours 36 12 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
SR 3.6.10.2	Perform required ICS filter testing in accordance	In accordance

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. 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. 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
~~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. Two ECCS PREACS trains inoperable for reasons other than Condition B.	C.1 Verify at least one train of [Control Room Emergency Air Cleanup System] 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 ~~4~~5.	6 hours 12~~3~~6 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. 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 ~~4~~5.	6 hours 12~~36~~ hours

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 [both] [required] groups of pressurizer heaters are inoperable, restoration of at least one group to OPERABLE status is required within 24 hours. This Required Action is not intended for routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. If [both] [required] groups of pressurizer heaters are inoperable, the pressurizer heaters will not be available to help maintain subcooling in the RCS loops during a natural circulation cooldown following a loss of offsite power. A lower risk alternative should be considered to this Required Action if plant pressure and level cannot be controlled within operating bounds, such as when both the safety and non-safety pressurizer heaters are unavailable. The inoperability of all [required] pressurizer heaters during the 24 hour Completion Time has been shown to be acceptable based on the low frequency of the potential challenge 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 Time~~s 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,

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, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 1, December 2007.

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 more than one PORV is inoperable and not capable of being manually cycled, it is necessary to ~~either~~ restore at least one valve within the Completion Time of 8 hours and ~~1 hour or~~ isolate the flow path by closing and removing the power to the associated block valves within 1 hour. 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. These Required Actions are not intended for routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. ~~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 not have a significant contribution to 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 & 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

If two block valves are inoperable, it is necessary to restore at least one block valve to OPERABLE status within 82 hours. 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, “Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown,” Revision 1, December 2007.

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

[45. 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

ACTIONS (continued)

C.1 and C.2

If more than one SIT is inoperable, the unit is in a condition outside the accident analysis. However, Reference 7 demonstrates that the 24 hour Completion Time is acceptable based on the low frequency of the potential challenge, the small incremental effect on plant risk, and the confirmation that all ECCS trains are OPERABLE, which will limit the impact of SIT unavailability. This Required Action is not intended for routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable.

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

If the SIT(s) cannot be restored to OPERABLE status within the associated Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and pressurizer pressure reduced to < 700 psia 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.

~~D.1~~

~~If more than one SIT is inoperable, the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.~~

SURVEILLANCE REQUIREMENTS

SR 3.5.1.1

Verification every 12 hours that each SIT isolation valve is fully open, as indicated in the control room, ensures that SITs are available for injection and ensures timely discovery if a valve should be partially closed. If an isolation valve is not fully open, the rate of injection to the RCS would be reduced. Although a motor operated valve should not change position with power removed, a closed valve could result in not meeting accident analysis assumptions. A 12 hour Frequency is considered reasonable in view of other administrative controls that ensure the unlikelihood of a mispositioned isolation valve.

SR 3.5.1.2 and SR 3.5.1.3

7. WCAP-16125-NP, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 1, December 2007.

BASES

APPLICABILITY

In MODES 1 and 2, and in MODE 3 with RCS pressure ≥ 1700 psia, the ECCS OPERABILITY requirements for the limiting Design Basis Accident (DBA) large break LOCA are based on full power operation. Although reduced power would not require the same level of performance, the accident analysis does not provide for reduced cooling requirements in the lower MODES. The HPSI pump performance is based on the small break LOCA, which establishes the pump performance curve and has less dependence on power. The charging pump performance requirements are based on a small break LOCA. The requirements of MODES 2 and 3, with RCS pressure ≥ 1700 psia, are bounded by the MODE 1 analysis.

The ECCS functional requirements of MODE 3, with RCS pressure < 1700 psia, and MODE 4 are described in LCO 3.5.3, "ECCS - Shutdown."

In MODES 5 and 6, unit conditions are such that the probability of an event requiring ECCS injection is extremely low. Core cooling requirements in MODE 5 are addressed by LCO 3.4.7, "RCS Loops - MODE 5, Loops Filled," and LCO 3.4.8, "RCS Loops - MODE 5, Loops Not Filled." MODE 6 core cooling requirements are addressed by LCO 3.9.4, "Shutdown Cooling (SDC) and Coolant Circulation - High Water Level," and LCO 3.9.5, "Shutdown Cooling (SDC) and Coolant Circulation - Low Water Level."

ACTIONS

A.1

With one LPSI subsystem inoperable, action must be taken to restore OPERABLE status within 7 days. In this condition, the remaining OPERABLE ECCS train is adequate to perform the heat removal function. However, the overall reliability is reduced because a single failure to the remaining LPSI subsystem could result in loss of ECCS function. The 7 day Completion Time is reasonable to perform corrective maintenance on the inoperable LPSI subsystem. The 7 day Completion Time is based on the findings of the deterministic and probabilistic analysis in Reference 7~~6~~. Reference ~~6~~ 7 concluded that extending the Completion Time to 7 days for an inoperable LPSI train provides plant operational flexibility while simultaneously reducing overall plant risk. This is because the risks incurred by having the LPSI train unavailable for a longer time at power will be substantially offset by the benefits associated with avoiding unnecessary plant transitions and by reducing risk during plant shutdown operations.

BASES

ACTIONS (continued)

B.1 and B.2

If two LPSI subsystems are inoperable, at least one LPSI subsystem must be returned to OPERABLE status within 24 hours. 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, the small incremental risk associated with continued operation, and on Required Action B.1, which verifies the OPERABILITY of the SITs within 1 hour. Note that Condition E applies if one or more HPSI subsystems are inoperable concurrent with two inoperable LPSI subsystems. These Required Actions are not intended for routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable.

~~B~~C.1

If one or more trains are inoperable ~~except~~ for reasons other than Condition A or B (one or two LPSI subsystems inoperable) and at least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train is available (otherwise, Condition E applies), the inoperable subsystems(s) ~~components~~ must be returned to OPERABLE status within 72 hours. The 72 hour Completion Time is based on an NRC study (Ref. 4) using a reliability evaluation and is a reasonable amount of time to effect many repairs.

An ECCS train is inoperable if it is not capable of delivering the design flow to the RCS. The individual components are inoperable if they are not capable of performing their design function, or if supporting systems are not available.

The LCO requires the OPERABILITY of a number of independent subsystems. Due to the redundancy of trains and the diversity of subsystems, the inoperability of one component in a train does not render the ECCS incapable of performing its function. Neither does the inoperability of two different components, each in a different train, necessarily result in a loss of function for the ECCS. This allows increased flexibility in plant operations when components in opposite trains are inoperable.

An event accompanied by a loss of offsite power and the failure of an emergency DG can disable one ECCS train until power is restored. A reliability analysis (Ref. 4) has shown that the impact with one full ECCS train inoperable is sufficiently small to justify continued operation for 72 hours.

BASES

ACTIONS (continued)

DC.1 and DC.2

If the inoperable train(s) cannot be restored to OPERABLE status within the associated Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and pressurizer pressure reduced to < 1700 psia within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power in an orderly manner and without challenging unit systems.

ED.1

Condition B E is applicable with one or more trains inoperable for reasons other than Condition B. The allowed Completion Time is based on the assumption that at least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train is available. With less than 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available, the facility is in a condition outside of the accident analyses. Therefore, LCO 3.0.3 must be entered immediately. One inoperable HPSI subsystem concurrent with two inoperable LPSI subsystems will result in less than 100% of the ECCS flow equivalent to a single OPERABLE ECCS train.

SURVEILLANCE REQUIREMENTS

SR 3.5.2.1

Verification of proper valve position ensures that the flow path from the ECCS pumps to the RCS is maintained. Misalignment of these valves could render both ECCS trains inoperable. Securing these valves in position by removing power or by key locking the control in the correct position ensures that the valves cannot be inadvertently misaligned or change position as the result of an active failure. These valves are of the type described in Reference 5, which can disable the function of both ECCS trains and invalidate the accident analysis. A 12 hour Frequency is considered reasonable in view of other administrative controls ensuring that a mispositioned valve is an unlikely possibility.

SR 3.5.2.2

Verifying the correct alignment for manual, power operated, and automatic valves in the ECCS flow paths provides assurance that the proper flow paths will exist for ECCS operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves were verified to be in the correct position prior to locking,

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.5.2.10

Periodic inspection of the containment sump ensures that it is unrestricted and stays in proper operating condition. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during an outage, on the need to have access to the location, and on the potential for unplanned transients if the Surveillance were performed with the reactor at power. This Frequency is sufficient to detect abnormal degradation and is confirmed by operating experience.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 35.

2. 10 CFR 50.46.

3. FSAR, Chapter [6].

4. NRC Memorandum to V. Stello, Jr., from R. L. Baer, "Recommended Interim Revisions to LCOs for ECCS Components," December 1, 1975.

5. IE Information Notice No. 87-01, January 6, 1987.

6. WCAP-16125-NP, “Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown,” Revision 1, December 2007.

7~~6~~. CE NPSD-995, "Low Pressure Safety Injection System AOT Extension," May 1995.

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 72 hours. The components in this degraded condition are capable of providing greater than 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 and the low probability of a DBA occurring during this period.

~~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

With two required containment spray trains inoperable and two required containment cooling trains inoperable, at least one of the inoperable trains must be restored to OPERABLE status within 12 hours. This Required Action is not intended for routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. The Completion Time is based on Reference 7 which demonstrated that the 12 hour Completion Time is acceptable because it does not make a significant contribution to plant risk.

GF.1 and FG.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.

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, “Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown,” Revision 1, December 2007.

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

BASES

ACTIONS (continued)

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.

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 72 hours. The components in this degraded condition are capable of providing greater than 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 and the low probability of a DBA occurring during this period.

D.1 and D.2

With one required containment spray train inoperable and one of the required containment cooling trains inoperable, the inoperable containment spray train or the inoperable containment cooling train must be restored to OPERABLE status within 72 hours. The components in this degraded condition are capable of providing at least 100% of the heat removal needs after an accident. The 72 hour Completion Time was developed based on the same reasons as those for Required Action C.1.

BASES

ACTIONS (continued)

E.1

With two 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 are capable of providing greater than 100% of the heat removal needs after an accident. The 72 hour Completion Time was developed based on the same reasons as those for Required Action C.1.

F.1 and F.2

With two required containment spray trains inoperable and two required containment cooling trains inoperable, at least one of the inoperable trains must be restored to OPERABLE status within 12 hours. This Required Action is not intended for routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. The Completion Time is based on Reference 6 which demonstrated that the 12 hour Completion Time is acceptable because it does not make a significant contribution to plant risk.

~~G~~F.1 and ~~G~~F.2

If any of the Required Actions and associated Completion Times ~~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 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 3.6.6B.1

Verifying the correct alignment for manual, power operated, and automatic valves, excluding check valves, in the Containment Spray System provides assurance that the proper flow path exists for Containment Spray System operation. This SR also does not apply to

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6B.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 for corrective action. The 31 day Frequency 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.

SR 3.6.6B.3

Verifying a service water flow rate of ≥ [2000] gpm to each cooling unit provides assurance 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 3.6.6B.4

Verifying the containment spray header 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 the water level in the piping occurring between surveillances.]

SR 3.6.6B.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. 7~~6~~). 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

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, Sections [ ].

4. FSAR, Section [ ].

5. FSAR, Section [ ].

6. WCAP-16125-NP, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 1, December 2007.

7~~6~~. 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. 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. These Required Actions are not intended for routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. The Completion Time is based on Reference 4 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.

~~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~~plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE ~~5~~ 4 within 12~~36~~ hours. Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower

than MODE 5 (Ref. 4) and because the time spent in MODE 4 to perform the necessary repairs to restore the system to OPERABLE status will be short. In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state. 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 3.6.8.1

Operating each SBEACS 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 adsorbers and HEPA filters. Experience from filter testing at operating units indicates that the 10 hour period is adequate for moisture

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. 45) guidance.

REFERENCES

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

2. FSAR, Section [ ].

3. FSAR, Section [ ].

4. WCAP-16125-NP, “Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown,” Revision 1, December 2007.

54. 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. 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. These Required Actions are not intended for routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. The Completion Time is based on Reference 5 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.

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 plant risk is minimized~~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~~5~~ within 12~~36~~ hours. Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 5) and because the time spent in MODE 4 to perform the necessary repairs to restore the system to OPERABLE status will be short. In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state. 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

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, “Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown,” Revision 1, December 2007.

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), the CREACS may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. This Required Action is not intended for routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. 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 the low frequency of the potential challenge and the small incremental risk associated with continued operation.

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 43.

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. 54).

BASES

REFERENCES

1. FSAR, Section [9.4].

2. FSAR, Chapter [15].

3. WCAP-16125-NP, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 1, December 2007.

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

54. 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 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. This Required Action is not intended for routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. At least one CREATCS train must be returned to OPERABLE status within 24 hours. The Completion Time is based on Reference 2 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.

~~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.

[DC.1 and DC.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 DC.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, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 1, December 2007.

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.

C.1 and C.2

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. In addition, at least one train of [Control Room Emergency Air Cleanup System (CREACS)] must be verified to be OPERABLE within 1 hour. In the event of an accident, the [CREACS] will filter contaminated air leaked from the ECCS pump rooms before it can enter the control room. This Required Action is not intended for routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. 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 this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE ~~4~~5 within 12~~36~~ hours. Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 6) and because the time spent in MODE 4 to perform the necessary repairs to restore the system to OPERABLE status will be short. In MODE 4 there are more accident mitigation systems

available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state. ~~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 3.7.13.1

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 a month provides an adequate check on this system. Monthly heater operations dry out any moisture that may have 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 equipment, and the two train redundancy available.

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, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 1, December 2007.
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. 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. This Required Action is not intended for routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. 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 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 overall plant risk is minimized~~the LCO does not apply~~. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4~~5~~ within 12~~36~~ hours. Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 6) and because the time spent in MODE 4 to perform the necessary repairs to restore the system to OPERABLE status will be short. In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state. ~~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.

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, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 1, December 2007.

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