NUCLEAR ENERGY INSTITUTE

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December 30, 1999

Dr. William D. Beckner, Branch Chief
Technical Specifications Branch
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Forwarding of Modified TSTFs

PROJECT NUMBER: 689

Dear Dr. Beckner:

Enclosed are four revised Technical Specification NUREGs NEI Technical Specification Task Force (TSTF) Travelers.

Revised travelers are TSTF-242, Rev. 1, TSTF-287, Rev. 4, TSTF-297, Rev. 1 and TSTF-340, Rev. 2. These travelers were modified as a result of feedback from NRC staff and they are all included in the final NUREG Revision 2 "target list."

As you have requested, copies of TSTF-76, Rev. 1 and TSTF-276, Rev. 2 are also attached.

A new Traveler, TSTF-361, Rev. 0, is also included. This Traveler makes a necessary change to the PWR Decay Heat Removal/Residual Heat Removal specifications and the TSTF would like the NRC to consider it for inclusion in Revision 2.

Please contact me at (202) 739-8105 or Vince Gilbert at (202) 739-8138 if you have any questions or need to meet with industry experts on these recommended changes.

Sincerely,

James W. Davis

James W. Davis

Enclosures

c: Patricia Coates
Stewart L. Magruder, NRR-DRPM
Technical Specification Task Force

DF03
1/1
Ltr
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Industry/TSTF Standard Technical Specification Change Traveler

Increase the time to perform a COT on Power Range and Intermediate Range Instruments

Classification: 3) Improve Specifications

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

Description:

SR 3.3.1.8, perform a COT on power range, intermediate range, and source range instrumentation, has 4 Frequencies: Prior to reactor startup, 4 hours after reducing power below P-10 for power and intermediate instrumentation, 4 hours after reducing power below P-6 for source range instrumentation, and every 92 days. This change increases the time allowed to perform the COT on the power and intermediate instrumentation from 4 hours to [12] hours.

Justification:

A review of plant work history (including performance and verification) revealed that COTs on the power range and intermediate range instrumentation requires 1 - 2 hours per channel. This is consistent with the source range COT time allowance in SR 3.3.1.8, as 4 hours is given for a 2 channel system. However, the power range and intermediate range COTs consist of 6 channels and four hours isn't sufficient time to perform these COTs in a quality manner. Therefore, the time to perform these COTs is extended to [12] hours (2 hours per channel) to be consistent with the source range time allowance of 4 hours for 2 channels.

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NRC Contact:	Schulten, Carl	301-415-1192	css1@nrc.gov

Revision History

OG Revision 0 Revision Status: Closed

Revision Proposed by: Calloway

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 14-Jan-97

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 14-Jan-97

TSTF Review Information

TSTF Received Date: 20-Jan-97 Date Distributed for Review 06-Jan-98

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

TSTF Comments:

Originally distributed on 4/8/97
CEOG Comments from 4/24/97: Not applicable, accepts.

2/5/98 - WOG only.

TSTF Resolution: Approved Date: 05-Feb-98

OG Revision 0 — Revision Status: Closed

NRC Review Information

NRC Received Date: 10-Mar-98

NRC Comments:

9/24/98 - C. Schulten to review 9/24/98.
4/21/99 - NRC comments: The TSTF fails to make a strong case that the 4-hour test AOT is an inadequate standard for testing. The staff will consider plant specific justifications for the proposed change if they substantiate that the plant is somehow limited by their designs or surveillance practices (e.g., one technician performs all testing) from complying with the NUREG 4-hour limit. Additionally, the proposed frequency needs to substantiate the proposed change with data recorded during plant COT testing for the PRNM and IRNM channels.

The staff will accept a change that puts the SR 3.3.1.8 4-hour test frequency in brackets; i.e., [Four] hours after reducing power below P-10 for power and intermediate range instrumentation.

10/13/99 - NRC agreed to determine why they can't approved the 12 hours or [12] hours and provide a response to the TSTF.

12/14/99 - NRC agrees to approved with a bracketed 12 hour Completion Time.

Final Resolution: Superceded by Revision Final Resolution Date:

TSTF Revision 1 — Revision Status: Active — Next Action: NRC

Revision Proposed by: NRC

Revision Description:
Revised to address NRC comments. The 12 hour Completion Time was bracketed requiring each converting plant to justify the Completion Time based on plant-specific data.

TSTF Review Information

TSTF Received Date: 14-Dec-99 Date Distributed for Review 14-Dec-99

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

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 14-Dec-99

NRC Review Information

NRC Received Date: 23-Dec-99

NRC Comments:

(No Comments)

Final Resolution: NRC Action Pending Final Resolution Date:

Incorporation Into the NUREGs

File to BBS/LAN Date: TSTF Informed Date: TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

SR 3.3.1.8	RTS Instrumentation
SR 3.3.1.8 Bases	RTS Instrumentation

TSTF-242, Rev 1

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.8	----------NOTE---------- This Surveillance shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions. ----------	
	Perform COT.	-----NOTE----- Only required when not performed within previous [92] days ---------- Prior to reactor startup AND [Twelve] Four hours after reducing power below P-10 for power and intermediate instrumentation AND Four hours after reducing power below P-6 for source range instrumentation AND Every 92 days thereafter

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.8

SR 3.3.1.8 is the performance of a COT as described in SR 3.3.1.7, except it is modified by a Note that this test shall include verification that the P-6 and P-10 interlocks are in their required state for the existing unit condition. The Frequency is modified by a Note that allows this surveillance to be satisfied if it has been performed within [92] days of the Frequencies prior to reactor startup and four hours after reducing power below P-10 and P-6. The Frequency of "prior to startup" ensures this surveillance is performed prior to critical operations and applies to the source, intermediate and power range low instrument channels. The Frequency of "4 hours after reducing power below P-10" (applicable to intermediate and power range low channels) and "4 hours after reducing power below P-6" (applicable to source range channels) allows a normal shutdown to be completed and the unit removed from the MODE of Applicability for this surveillance without a delay to perform the testing required by this surveillance. The Frequency of every 92 days thereafter applies if the plant remains in the MODE of Applicability after the initial performances of prior to reactor startup and four hours after reducing power below P-10 or P-6. The MODE of Applicability for this surveillance is < P-10 for the power range low and intermediate range channels and < P-6 for the source range channels. Once the unit is in MODE 3, this surveillance is no longer required. If power is to be maintained < P-10 or < P-6 for more than 4 hours, then the testing required by this surveillance must be performed prior to the expiration of the 4 hour limit. Four hours is a reasonable time to complete the required testing or place the unit in a MODE where this surveillance is no longer required. This test ensures that the NIS source, intermediate, and power range low channels are OPERABLE prior to taking the reactor critical and after reducing power into the applicable MODE (< P-10 or < P-6) for periods > 4 hours.

SR 3.3.1.9

SR 3.3.1.9 is the performance of a TADOT and is performed every [92] days, as justified in Reference 7.

(continued)

Industry/TSTF Standard Technical Specification Change Traveler

Ventilation System Envelope Allowed Outage Time

Classification: 3) Improve Specifications

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

Description:

This change provides specific Conditions and Required Actions for room/barrier degradation (as opposed to ventilation train degradation). The Surveillances that test the integrity of the room/barrier require a positive or negative pressure limit to be satisfied in the area with one required ventilation train operating. While other Surveillances in the same specification test the operability of the ventilation train, these barrier surveillances ensure the envelope leak tightness is adequate to meet the design assumptions. However, there are no corresponding Conditions, Required Actions, or Completion Times associated with failure of these barrier Surveillances. Under existing specifications, LCO 3.0.3 must be entered (for two train inoperability). The proposed change would allow 24 hours (during operating MODES) to restore the capability to maintain proper pressure before requiring the unit to perform an orderly shutdown and also allows intermittent opening of the control room barrier under administrative control.

Justification:

Requiring the plant to enter LCO 3.0.3 when the ventilation envelope is not intact is excessive and, in the case of the FBACS OR FSPVS, is not appropriate. Modeling these specifications on the Shield Building specification (NUREG-1431, LCO 3.6.19) for a Dual or Ice Condenser containment would provide consistency within the NUREG. NUREG-1431 Specification 3.6.19 allows 24 hours to restore the envelope to Operable status before requiring an orderly shutdown from operating conditions (MODE 3 in 6 hours, MODE 5 in 36 hours). This would allow for routine repairs. The proposed change is acceptable because of the low probability of a DBA occurring during the 24 hour AOT. Furthermore, (modeling an allowance on the CIV allowance to intermittently open penetrations that are otherwise required to be closed), an LCO Note is added to allow intermittent opening (e.g. as for entering and exiting) without entering the Actions.

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NRC Contact:	Giardina, Bob	301-314-3152	lbb1@nrc.gov

Revision History

OG Revision 0 Revision Status: Closed

Revision Proposed by: South Texas Project

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 19-Nov-96

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 19-Nov-96

TSTF Review Information

TSTF Received Date: 17-Dec-96 Date Distributed for Review

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

OG Revision 0 Revision Status: Closed

TSTF Comments:

On hold for WOG Mini-Group changes.

TSTF Resolution: Withdrawn Date: 27-Apr-97

OG Revision 1 Revision Status: Closed

Revision Proposed by: WOG

Revision Description:
Complete replacement of WOG-86, Rev. 0

Owners Group Review Information

Date Originated by OG: 27-Apr-97

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 27-Apr-97

TSTF Review Information

TSTF Received Date: 27-Apr-97 Date Distributed for Review 06-Jan-98

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

TSTF Comments:

Applicable to all and accepted.

TSTF Resolution: Approved Date: 05-Feb-98

NRC Review Information

NRC Received Date: 29-May-98

NRC Comments:

7/16/98 - The change has merit; however, the staff does not believe that the proposed change has been fully evaluated by the OG. The SR that supposedly tests the integrity of the room/barrier has two acceptance criteria -- a pressure limit (positive or negative) and a system flow limit. While failure of the pressure limit alone would indicate boundary degradation, failure of the pressure and flow limit while performing the SR could indicate system degradation and/or boundary degradation. Under these circumstances, it is conceivable that both Actions A and B would have to be entered. A number of concerns arise from this:

1) What is to prevent the entering and exiting of Actions A or B over an indefinite period of time? Maybe there should be an overall completion time similar to the completion times specified in Actions for STS 3.7.5.

2) In this situation, the implication is that, in order to verify if it is a boundary inoperability or just a system inoperability resulting in the exiting of Action B, the opposite train would be tested. This is something that has been deleted from TS, and not a prudent thing to do. Do we want to begin this back in this case?

3) The wording of the Condition "Two trains inoperable due to inoperable boundary" could lead to confusion as to which Action to enter (Action B or LCO 3.0.3) under this situation in which both trains are inoperable for other reasons as well as failure to meet this SR and the boundary is inoperable. LCO 3.0.3 should probably be entered, but the wording could lead one to enter Action B.

OG Revision 1 Revision Status: Closed

As additional concern with the change involves the Actions associated with an inoperable boundary during movement of irradiated fuel assemblies and core alterations. The staff does not believe that, in this situation, fuel movement should be allowed for up to 24 hours.

With this potential loss of radiation filtering, Actions should be taken to immediately suspend fuel movement and/or Core Alterations. This change is applicable to the Control Room and Fuel Building Ventilation Specification.

9/24/98 - NRC to consider the TSTF response to NRC's request to modify and contact Bryan Ford by 10/9/98 to discuss further.

11/12/98 - B. Ford and B. Giardina to discuss on 11/19/98.

Final Resolution: Superceded by Revision Final Resolution Date: 16-Jul-98

TSTF Revision 1 Revision Status: Closed

Revision Proposed by: TSTF

Revision Description:
Revised based on NRC comments. The 24 hour Action is limited to operating MODES only and an LCO Note is added to allow intermittent opening in all of MODE 5.

TSTF Review Information

TSTF Received Date: 20-Nov-98 Date Distributed for Review 20-Nov-98

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

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 20-Nov-98

NRC Review Information

NRC Received Date: 15-Dec-98

NRC Comments:
(No Comments)

Final Resolution: Superceded by Revision Final Resolution Date:

TSTF Revision 2 Revision Status: Closed

Revision Proposed by: NRC

Revision Description:
Eliminated extraneous "OR" from BWOG page 3.7-31 and CEOG page 3.7-32 (left from previous revision).

TSTF Review Information

TSTF Received Date: 24-Jan-99 Date Distributed for Review 24-Jan-99

TSTF Revision 2 Revision Status: Closed

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

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 24-Jan-99

NRC Review Information

NRC Received Date: 16-Mar-99

NRC Comments:

4/21/99 - In tech branch review (SPLB & SPSB)
6/16/99 - NRC (B. Beckner) stated that TSB will approve separately from other control room issues.
10/3/99 NRC comments:
The staff has completed its review of the latest markup of the Bases for Action B.1 of the Control Room STS contained in this TSTF and conclude that it is acceptable with one exception. Removal of the reference to GDC is unacceptable. We believe that compensatory measures should have some fundamental technical basis, and that for the control room, GDC 19 is the standard for the fundamental technical bases we find acceptable. Compensatory measures that are not consistent with the intent of GDC 19 will likely not provide the protection we believe is necessary. In addition, while this is an acceptable plan for the control room, we believe that a similar compensatory action plan should be provided for all the other buildings, should be consistent with the applicable regulations (GDC 19, Part 100, etc.), and that a similar Bases description should be provided in the other specifications modified by TSTF-287, Revision 2. Following is the proposed Insert 1.

B.1

[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 CREVS 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.

Final Resolution: Superceded by Revision Final Resolution Date: 06-Oct-99

TSTF Revision 3 Revision Status: Closed

Revision Proposed by: NRC

Revision Description:
Revised the Bases for Action B.1 to incorporate NRC comments.

TSTF Review Information

TSTF Revision 3 — Revision Status: Closed

TSTF Received Date: 01-Nov-99 Date Distributed for Review 18-Nov-99

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

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 18-Nov-99

NRC Review Information

NRC Received Date: 23-Nov-99

NRC Comments:
(No Comments)

Final Resolution: Superceded by Revision Final Resolution Date:

TSTF Revision 4 — Revision Status: Active — Next Action: NRC

Revision Proposed by: NRC

Revision Description:
Revised inserts for areas other than the control room to refer to protecting "plant personnel" instead of "control room operators."

TSTF Review Information

TSTF Received Date: 14-Dec-99 Date Distributed for Review 14-Dec-99

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

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 14-Dec-99

NRC Review Information

NRC Received Date: 23-Dec-99

NRC Comments:
(No Comments)

Final Resolution: NRC Action Pending Final Resolution Date:

Incorporation Into the NUREGs

File to BBS/LAN Date: TSTF Informed Date: TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

LCO 3.7.10 CREVS NUREG(s)- 1430 Only

12/23/99

LCO 3.7.10 Bases	CREVS		NUREG(s)- 1430 Only
Action 3.7.10.B	CREVS		NUREG(s)- 1430 Only
	Change Description:	New Condition	
Action 3.7.10.B	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.10.C and Revised	
Action 3.7.10.B Bases	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.10.C and Revised	
Action 3.7.10.B Bases	CREVS		NUREG(s)- 1430 Only
	Change Description:	New Condition	
Action 3.7.10.C	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.10.D	
Action 3.7.10.C Bases	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.10.D	
Action 3.7.10.D	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.10.E and Revised	
Action 3.7.10.D Bases	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.10.E	
Action 3.7.10.E	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.10.F	
Action 3.7.10.E Bases	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.10.F and Revised	
LCO 3.7.12	EVS		NUREG(s)- 1430 Only
LCO 3.7.12 Bases	EVS		NUREG(s)- 1430 Only
Action 3.7.12.B	EVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.12.C	
Action 3.7.12.B	EVS		NUREG(s)- 1430 Only
	Change Description:	New Condition	
Action 3.7.12.B Bases	EVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.12.C and Revised	
Action 3.7.12.B Bases	EVS		NUREG(s)- 1430 Only
	Change Description:	New Condition	
LCO 3.7.13	FSPVS		NUREG(s)- 1430 Only
LCO 3.7.13 Bases	FSPVS		NUREG(s)- 1430 Only
Action 3.7.13.B	FSPVS		NUREG(s)- 1430 Only
	Change Description:	New Condition	

Action 3.7.13.B	FSPVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.13.C and Revised	
Action 3.7.13.B Bases	FSPVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.13.C and Revised	
Action 3.7.13.B Bases	FSPVS		NUREG(s)- 1430 Only
	Change Description:	New Condition	
Action 3.7.13.C	FSPVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.13.D	
Action 3.7.13.C Bases	FSPVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.13.D	
Action 3.7.13.D	FSPVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.13.E	
Action 3.7.13.D Bases	FSPVS		NUREG(s)- 1430 Only
	Change Description:	Renamed 3.7.13.E	
LCO 3.7.10	CREFS		NUREG(s)- 1431 Only
LCO 3.7.10 Bases	CREFS		NUREG(s)- 1431 Only
Action 3.7.10.B	CREFS		NUREG(s)- 1431 Only
	Change Description:	New Condition	
Action 3.7.10.B	CREFS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.10.C and Revised	
Action 3.7.10.B Bases	CREFS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.10.C and Revised	
Action 3.7.10.B Bases	CREFS		NUREG(s)- 1431 Only
	Change Description:	New Condition	
Action 3.7.10.C	CREFS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.10.D	
Action 3.7.10.C Bases	CREFS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.10.D	
Action 3.7.10.D	CREFS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.10.E	
Action 3.7.10.D Bases	CREFS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.10.E	
Action 3.7.10.E	CREFS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.10.F and Revised	
Action 3.7.10.E Bases	CREFS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.10.F and Revised	

LCO 3.7.12	ECCS PREACS		NUREG(s)- 1431 Only
LCO 3.7.12 Bases	ECCS PREACS		NUREG(s)- 1431 Only
Action 3.7.12.B	ECCS PREACS		NUREG(s)- 1431 Only
	Change Description:	New Condition	
Action 3.7.12.B	ECCS PREACS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.12.C	
Action 3.7.12.B Bases	ECCS PREACS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.12.C and Revised	
Action 3.7.12.B Bases	ECCS PREACS		NUREG(s)- 1431 Only
	Change Description:	New Condition	
LCO 3.7.13	FBACS		NUREG(s)- 1431 Only
LCO 3.7.13 Bases	FBACS		NUREG(s)- 1431 Only
Action 3.7.13.B	FBACS		NUREG(s)- 1431 Only
	Change Description:	New Condition	
Action 3.7.13.B	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.13.C and Revised	
Action 3.7.13.B Bases	FBACS		NUREG(s)- 1431 Only
	Change Description:	New Condition	
Action 3.7.13.B Bases	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.13.C and Revised	
Action 3.7.13.C	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.13.D	
Action 3.7.13.C Bases	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.13.D	
Action 3.7.13.D	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.13.E	
Action 3.7.13.D Bases	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.13.E	
LCO 3.7.14	PREACS		NUREG(s)- 1431 Only
LCO 3.7.14 Bases	PREACS		NUREG(s)- 1431 Only
Action 3.7.14.B	PREACS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.14.C	
Action 3.7.14.B	PREACS		NUREG(s)- 1431 Only
	Change Description:	New Condition	

Action 3.7.14.B Bases	PREACS		NUREG(s)- 1431 Only
	Change Description:	New Condition	
Action 3.7.14.B Bases	PREACS		NUREG(s)- 1431 Only
	Change Description:	Renamed 3.7.14.C and Revised	
LCO 3.7.11	CREACS		NUREG(s)- 1432 Only
LCO 3.7.11 Bases	CREACS		NUREG(s)- 1432 Only
Action 3.7.11.B	CREACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.11.C and Revised	
Action 3.7.11.B	CREACS		NUREG(s)- 1432 Only
	Change Description:	New Condition	
Action 3.7.11.B Bases	CREACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.11.C and Revised	
Action 3.7.11.B Bases	CREACS		NUREG(s)- 1432 Only
	Change Description:	New Condition	
Action 3.7.11.C	CREACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.11.D	
Action 3.7.11.C Bases	CREACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.10.D	
Action 3.7.11.D	CREACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.11.E and Revised	
Action 3.7.11.D Bases	CREACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.11.E and Revised	
Action 3.7.11.E	CREACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.11.F	
Action 3.7.11.E Bases	CREACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.11.F	
LCO 3.7.13	ECCS PREACS		NUREG(s)- 1432 Only
LCO 3.7.13 Bases	ECCS PREACS		NUREG(s)- 1432 Only
Action 3.7.13.B	ECCS PREACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.13.C	
Action 3.7.13.B	ECCS PREACS		NUREG(s)- 1432 Only
	Change Description:	New Condition	
Action 3.7.13.B Bases	ECCS PREACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.13.C and Revised	

Action 3.7.13.B Bases	ECCS PREACS		NUREG(s)- 1432 Only
	Change Description:	New Condition	
LCO 3.7.14	FBACS		NUREG(s)- 1432 Only
LCO 3.7.14 Bases	FBACS		NUREG(s)- 1432 Only
Action 3.7.14.B	FBACS		NUREG(s)- 1432 Only
	Change Description:	New Condition	
Action 3.7.14.B	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.14.C and Revised	
Action 3.7.14.B Bases	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.14.C and Revised	
Action 3.7.14.B Bases	FBACS		NUREG(s)- 1432 Only
	Change Description:	New Condition	
Action 3.7.14.C	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.14.D	
Action 3.7.14.C Bases	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.14.D	
Action 3.7.14.D	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.14.E	
Action 3.7.14.D Bases	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.14.E	
LCO 3.7.15	PREACS		NUREG(s)- 1432 Only
LCO 3.7.15 Bases	PREACS		NUREG(s)- 1432 Only
Action 3.7.15.B	PREACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.15.C	
Action 3.7.15.B	PREACS		NUREG(s)- 1432 Only
	Change Description:	New Condition	
Action 3.7.15.B Bases	PREACS		NUREG(s)- 1432 Only
	Change Description:	Renamed 3.7.15.C and Revised	
Action 3.7.15.B Bases	PREACS		NUREG(s)- 1432 Only
	Change Description:	New Condition	
LCO 3.7.4	[MCREC] System		NUREG(s)- 1433 Only
LCO 3.7.4 Bases	[MCREC] System		NUREG(s)- 1433 Only
Action 3.7.4.B	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renumbered 3.7.4.C and Revised	

Action 3.7.4.B	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	New Condition	
Action 3.7.4.B Bases	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renumbered 3.7.4.C and Revised	
Action 3.7.4.B Bases	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	New Condition	
Action 3.7.4.C	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renumbered 3.7.4.D	
Action 3.7.4.C Bases	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renumbered 3.7.4.D	
Action 3.7.4.D	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renumbered 3.7.4.E and Revised	
Action 3.7.4.D Bases	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renumbered 3.7.4.E and Revised	
Action 3.7.4.E	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renumbered 3.7.4.F	
Action 3.7.4.E Bases	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renumbered 3.7.4.F	
LCO 3.7.3	[CRFA] System		NUREG(s)- 1434 Only
LCO 3.7.3 Bases	[CRFA] System		NUREG(s)- 1434 Only
Action 3.7.3.B	[CRFA] System		NUREG(s)- 1434 Only
	Change Description:	New Condition	
Action 3.7.3.B	[CRFA] System		NUREG(s)- 1434 Only
	Change Description:	Renumbered 3.7.3.C and Revised	
Action 3.7.3.B Bases	[CRFA] System		NUREG(s)- 1434 Only
	Change Description:	New Condition	
Action 3.7.3.B Bases	[CRFA] System		NUREG(s)- 1434 Only
	Change Description:	Renumbered 3.7.3.C and Revised	
Action 3.7.3.C	[CRFA] System		NUREG(s)- 1434 Only
	Change Description:	Renumbered 3.7.3.D	
Action 3.7.3.C Bases	[CRFA] System		NUREG(s)- 1434 Only
	Change Description:	Renumbered 3.7.3.D	
Action 3.7.3.D	[CRFA] System		NUREG(s)- 1434 Only
	Change Description:	Renumbered 3.7.3.E	
Action 3.7.3.D Bases	[CRFA] System		NUREG(s)- 1434 Only
	Change Description:	Renumbered 3.7.3.E	

Action 3.7.3.E	[CRFA] System	NUREG(s)- 1434 Only
	Change Description: Renumbered 3.7.3.F	
Action 3.7.3.E Bases	[CRFA] System	NUREG(s)- 1434 Only
	Change Description: Renumbered 3.7.3.F	

INSERT
LCO NOTE (BWOG 3.7.10, CREVS)

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

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3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency Ventilation System (CREVS)

LCO 3.7.10 Two CREVS trains shall be OPERABLE.

INSERT LCO NOTE

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREVS train inoperable.	A.1 Restore CREVS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4. (C) (or B)	B.1 (C) Be in MODE 3. AND B.2 (C) Be in MODE 5.	6 hours 36 hours
[D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS].	[D.1 (D) --------NOTE-------- Place in emergency mode if automatic transfer to emergency mode inoperable. ---------- Place OPERABLE CREVS train in emergency mode. OR	Immediately
B. Two CREVS trains inoperable due to inoperable control room boundary in MODES 1, 2, 3, and 4.	B.1 Restore control room boundary to OPERABLE status.	24 hours

(continued)

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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. (continued)	D.2.1 Suspend Core ALTERATIONS. AND D.2.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately
E. Two CREVS trains inoperable during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS]. for reasons other than Condition B	E.1 Suspend movement of irradiated fuel assemblies. AND E.2 Suspend CORE ALTERATIONS.	Immediately Immediately
F. Two CREVS trains inoperable during MODE 1, 2, 3, or 4.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each CREVS train for [≥ 10 continuous hours with the heaters operating or (for system without heaters) ≥ 15 minutes].	31 days

(continued)

INSERT

LCO NOTE BASES (BWOG 3.7.10, CREVS)

The LCO is modified by a Note allowing the control room boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for control room isolation is indicated.

INSERT 1 (BWOG)

B.1

[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 CREVS 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.

BASES

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APPLICABLE SAFETY ANALYSES (continued)

The worst case single active failure of a CREVS component, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

[For this unit, there are no sources of toxic gases or chemicals that could be released to affect control room habitability.]

The CREVS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two independent and redundant CREVS trains are required to be OPERABLE to ensure that at least one is available if a single failure disables the other train. Total system failure could result in exceeding a dose of 5 rem to the control room operators in the event of a large radioactive release.

The CREVS is considered OPERABLE when the individual components necessary to control operator exposure are OPERABLE in both trains. A CREVS train is considered OPERABLE when the associated:

a. Fan is OPERABLE;

b. HEPA filter and charcoal absorber are not excessively restricting flow, and are capable of performing their filtration functions; and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

INSERT LCO NOTE BASES

In addition, the control room boundary, including the integrity of the walls, floors, ceilings, ductwork, and access doors, must be maintained within the assumptions of the design analysis.

APPLICABILITY

In MODES 1, 2, 3, and 4, the CREVS must be OPERABLE to ensure that the control room will remain habitable during and following a DBA.

(continued)

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BASES

APPLICABILITY (continued) During movement of irradiated fuel assemblies [and during CORE ALTERATIONS], the CREVS must be OPERABLE to cope with a release due to a fuel handling accident.

ACTIONS

A.1

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

INSERT 1 (BWOG)

C

B.1 and B.2

C

or control room boundary

In MODE 1, 2, 3, or 4, if the inoperable CREVS train cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

D D D

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

[In MODE 5 or 6, or] during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS], if the inoperable CREVS train cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE CREVS train must immediately be placed in the emergency mode. 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. Required Action C.1 is modified by a Note indicating to place the system in the emergency mode if automatic transfer to emergency mode is inoperable.

D

(continued)

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BASES

ACTIONS

D D D
[ ].1, [ ].2.1, and [ ].2.2 (continued)

An alternative to Required Action [ ].1 is to immediately suspend activities that could release 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

[In MODE 5 or 6, or] during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS], when two CREVS trains are inoperable, action must be taken immediately to suspend activities that could release radioactivity that could enter 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

for reasons other than an inoperable control room boundary (i.e., Condition B)

If both CREVS trains are inoperable in MODE 1, 2, 3, or 4, the CREVS 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 3.7.10.1

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 adequately checks this system. Monthly heater operations dry out any moisture that has accumulated in the charcoal because of humidity in the ambient air. [Systems with heaters must be operated for $\geq$ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for $\geq$ 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.

(continued)

INSERT
LCO NOTE (BWOG 3.7.12, EVS)

---------- NOTE ----------
The Auxiliary Building negative pressure area boundary may be opened intermittently under administrative control.

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3.7 PLANT SYSTEMS

3.7.12 Emergency Ventilation System (EVS)

LCO 3.7.12 Two EVS trains shall be OPERABLE.

INSERT LCO NOTE

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One EVS train inoperable.	A.1 Restore EVS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met. (C)	B.1 (C) Be in MODE 3. AND B.2 (C) Be in MODE 5.	6 hours 36 hours
B. Two EVS trains inoperable due to inoperable Auxiliary Building negative pressure area boundary.	B.1 Restore Auxiliary Building negative pressure area boundary to OPERABLE status.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Operate each EVS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days
SR 3.7.12.2	Perform required EVS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]

(continued)

INSERT

LCO NOTE BASES (BWOG 3.7.12, EVS)

The LCO is modified by a Note allowing the Auxiliary Building negative pressure area boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for Auxiliary Building negative pressure area isolation is indicated.

INSERT 2 (BWOG)

B.1

[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 Auxiliary Building negative pressure area boundary is inoperable, the EVS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE Auxiliary Building negative pressure area boundary within 24 hours. During the period that the Auxiliary Building negative pressure area boundary is inoperable, appropriate compensatory measures 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 Auxiliary Building negative pressure area boundary.

BASES

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APPLICABLE SAFETY ANALYSES (continued)

Two types of system failures are considered in the accident analysis: complete loss of function, and excessive LEAKAGE. Either type of failure may result in a lower efficiency of removal of any gaseous and particulate activity released to the ECCS pump rooms following a LOCA.

Following a LOCA, an ESFAS signal starts the EVS fans and opens the dampers located in the penetration room outlet ductwork. The ESFAS signal closes all containment isolation valves and purge system valves. The purge system fans, if running, are shut down automatically.

The EVS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two independent and redundant trains of the EVS are required to be OPERABLE to ensure that at least one is available, assuming that a single failure disables the other train coincident with loss of offsite power. Total system failure could result in atmospheric release from the negative pressure area boundary exceeding Reference 4 limits in the event of a Design Basis Accident (DBA).

The EVS is considered OPERABLE when the individual components necessary to maintain the negative pressure area boundary filtration are OPERABLE in both trains.

An EVS train is considered OPERABLE when its associated:

a. Fan is OPERABLE;

b. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions; and

c. [Heater, demister,] ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

INSERT LCO NOTE BASES →

APPLICABILITY

In MODES 1, 2, 3, and 4, the EVS is required to be OPERABLE consistent with the OPERABILITY requirements of the ECCS.

In MODES 5 and 6, the EVS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

(continued)

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BASES (continued)

ACTIONS

A.1

With one EVS train inoperable, action must be taken to restore OPERABLE status within 7 days. During this time, the remaining OPERABLE train is adequate to perform the EVS safety function. However, the overall reliability is reduced because a single failure in the OPERABLE EVS train could result in loss of EVS function.

The 7 day Completion Time is appropriate because the risk contribution is less than that of the ECCS (72 hour Completion Time), and this system is not a direct support system for the ECCS. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

INSERT 2 (BWOG) →

C B.1 and B.2 C

or the Auxiliary Building negative pressure area boundary

If the EVS train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

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 $\geq$ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for $\geq$ 15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on known reliability of equipment and the two train redundancy available.

(continued)

INSERT
LCO NOTE (BWOG 3.7.13, FSPVS)

---------- NOTE ----------
The fuel building boundary may be opened intermittently under administrative control.

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Rev 4

3.7 PLANT SYSTEMS

3.7.13 Fuel Storage Pool Ventilation System (FSPVS)

LCO 3.7.13 [Two] FSPVS trains shall be OPERABLE.

← INSERT LCO NOTE

APPLICABILITY: [MODES 1, 2, 3, and 4,]
During movement of irradiated fuel assemblies in the fuel building.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One FSPVS train inoperable.	A.1 Restore FSPVS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4. (C) (or B) OR Two FSPVs trains inoperable in MODE 1, 2, 3, or 4. (for reasons other than Condition B)	B.1 (C) Be in MODE 3. AND B.2 (C) Be in MODE 5.	6 hours 36 hours
C. (D) Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the fuel building.	C.1 (D) Place OPERABLE FSPVS train in operation. OR C.2 (D) Suspend movement of irradiated fuel assemblies in the fuel building.	Immediately Immediately
B. Two FSPVS trains inoperable due to inoperable fuel building boundary in MODES 1, 2, 3, and 4.	B.1 Restore fuel building boundary to OPERABLE status	24 hours

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (E) Two FSPVS trains inoperable during movement of irradiated fuel assemblies in the fuel building.	B.1 (E) Suspend movement of irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
[SR 3.7.13.1	Operate each FSPVS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days]
[SR 3.7.13.2	Perform required FSPVS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]]
[SR 3.7.13.3	Verify each FSPVS train actuates on an actual or simulated actuation signal.	[18] months]
SR 3.7.13.4	Verify one FSPVS train can maintain a pressure ≤ [ ] inches water gauge with respect to atmospheric pressure during the [post accident] mode of operation at a flow rate ≤ [3000] cfm.	[18] months on a STAGGERED TEST BASIS

(continued)

INSERT

LCO NOTE BASES (BWOG 3.7.13, FSPVS)

The LCO is modified by a Note allowing the fuel building boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for fuel building isolation is indicated.

INSERT 3 (BWOG)

B.1

[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 fuel building boundary is inoperable in MODES 1, 2, 3, and 4, the FSPVS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE fuel building boundary within 24 hours. During the period that the fuel building boundary is inoperable, appropriate compensatory measures 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 fuel building boundary.

BASES

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BACKGROUND (continued)

because it may be used for normal as well as post accident, atmospheric cleanup functions.

APPLICABLE SAFETY ANALYSES

The FSPVS design basis is established by the consequences of the limiting Design Basis Accident (DBA), which is a fuel handling accident. The analysis of the fuel handling accident, given in Reference 3, assumes that a certain number of fuel rods in an assembly are damaged. The DBA analysis of the fuel handling accident assumes that only one train of the FSPVS is functional due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive material provided by the remaining one train of this filtration system. These assumptions and the analysis follow the guidance provided in Regulatory Guide 1.25 (Ref. 4).

The FSPVS satisfies Criterion 3 of the NRC Policy Statement.

LCO

[Two] independent and redundant trains of the FSPVS are required to be OPERABLE to ensure that at least one is available, assuming a single failure that disables the other train coincident with a loss of offsite power. Total system failure could result in the atmospheric release from the fuel handling area exceeding 10 CFR 100 (Ref. 5) limits in the event of a fuel handling accident.

The FSPVS is considered OPERABLE when the individual components necessary to control operator exposure in the fuel handling building are OPERABLE in both trains. An FSPVS train is considered OPERABLE when its associated:

1. Fan is OPERABLE;

2. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions; and

3. [Heater, demister,] ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

INSERT LCO NOTE BASES →

(continued)

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BASES (continued)

APPLICABILITY

In [MODES 1, 2, 3, and 4,] the FSPVS is required to be OPERABLE to provide fission product removal associated with ECCS leaks due to a loss of coolant accident (refer to LCO 3.7.12) for units that use this system as part of their EVSs.

During movement of irradiated fuel assemblies in the fuel handling area, the FSPVS is always required to be OPERABLE to mitigate the consequences of a fuel handling accident.

In MODES 5 and 6, the FSPVS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

With one FSPVS train inoperable, action must be taken to restore OPERABLE status within 7 days. During this time period, the remaining OPERABLE train is adequate to perform the FSPVS function. However, the overall reliability is reduced because a single failure in the OPERABLE FSPVS train could result in a loss of FSPVS functioning. The 7 day Completion Time is based on the risk from an event occurring requiring the inoperable FSPVS train, and ability of the remaining FSPVS train to provide the required protection.

INSERT 3 (BWOG) →

B.1 and B.2

or B.1

In MODE 1, 2, 3, or 4, when Required Action A.1 cannot be completed within the associated Completion Time, or when both FSPVS trains are inoperable, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The 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.

for reasons other than an inoperable fuel building boundary (i.e.) Condition B)

D D

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

If the inoperable FSPVS train cannot be restored to OPERABLE status within the required Completion Time, during movement

(continued)

BASES

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ACTIONS

D D
[ ].1 and [ ].2 (continued)

of irradiated fuel assemblies in the fuel handling area, the OPERABLE FSPVS train must be started immediately or fuel movement suspended. This action ensures that the remaining train is OPERABLE, that no undetected failures preventing system operation will occur, and that any active failures will be readily detected.

If the system is not placed in operation, this action requires suspension of fuel movement, which precludes a fuel handling accident. This action does not preclude the movement of fuel assemblies to a safe position.

E
[ ].1

When two trains of the FSPVS are inoperable during movement of irradiated fuel assemblies in the fuel handling area, the unit must be placed in a condition in which the LCO does not apply. This LCO involves immediately suspending movement of irradiated fuel assemblies in the fuel handling area. This does not preclude the movement of fuel to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.7.13.1

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 accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for $\geq$ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for $\geq$ 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 3.7.13.2

This SR verifies that the required FSPVS testing is performed in accordance with the [Ventilation Filter Testing

(continued)

INSERT
LCO NOTE (WOG 3.7.10, CREFS)

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

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3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency Filtration System (CREFS)

LCO 3.7.10 Two CREFS trains shall be OPERABLE.

← INSERT LCO NOTE

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREFS train inoperable.	A.1 Restore CREFS train to OPERABLE status.	7 days
~~B.~~ C Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4. (or B)	~~B~~.1 C Be in MODE 3. AND ~~B~~.2 C Be in MODE 5.	6 hours 36 hours
~~C.~~ D Required Action and associated Completion Time of Condition A not met [in MODE 5 or 6, or] during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS].	~~C~~.1 D -------NOTE-------- Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable. ---------- Place OPERABLE CREFS train in emergency mode. OR	Immediately
B. Two CREFS trains inoperable due to inoperable Control room boundary in MODES 1, 2, 3, and 4.	B.1 Restore control room boundary to OPERABLE status.	24 hours

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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~C.~~ (D) (continued)	[~~C~~.2.1 D Suspend CORE ALTERATIONS. AND	Immediately]
	~~C~~.2.[2] D Suspend movement of irradiated fuel assemblies.	Immediately
(E) ~~D.~~ Two CREFS trains inoperable [in MODE 5 or 6, or] during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS].	[~~D~~.1 E Suspend CORE ALTERATIONS. AND	Immediately]
	~~D~~.[2] E Suspend movement of irradiated fuel assemblies.	Immediately
(F) ~~E.~~ Two CREFS trains inoperable in MODE 1, 2, 3, or 4.	F ~~E~~.1 Enter LCO 3.0.3. (for reasons other than Condition B)	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each CREFS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days

(continued)

INSERT

LCO NOTE BASES (WOG 3.7.10, CREFS)

The LCO is modified by a Note allowing the control room boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for control room isolation is indicated.

INSERT 1 (WOG)

B.1

[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 CREFS 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.

BASES

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APPLICABLE SAFETY ANALYSES (continued)

loss of coolant accident, fission product release presented in the FSAR, Chapter [15] (Ref. 2).

The analysis of toxic gas releases demonstrates that the toxicity limits are not exceeded in the control room following a toxic chemical release, as presented in Reference 1.

The worst case single active failure of a component of the CREFS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

The CREFS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two independent and redundant CREFS trains are required to be OPERABLE to ensure that at least one is available assuming a single failure disables the other train. Total system failure could result in exceeding a dose of 5 rem to the control room operator in the event of a large radioactive release.

The CREFS is considered OPERABLE when the individual components necessary to limit operator exposure are OPERABLE in both trains. A CREFS train is OPERABLE when the associated:

a. Fan is OPERABLE;

b. HEPA filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions; and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

INSERT LCO NOTE BASES →

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.

APPLICABILITY

In MODES 1, 2, 3, 4, [5, and 6,] and during movement of irradiated fuel assemblies [and during CORE ALTERATIONS],

(continued)

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BASES

APPLICABILITY (continued)

CREFS must be OPERABLE to control operator exposure during and following a DBA.

In [MODE 5 or 6], the CREFS is required to cope with the release from the rupture of an outside waste gas tank.

During movement of irradiated fuel assemblies [and CORE ALTERATIONS], the CREFS must be OPERABLE to cope with the release from a fuel handling accident.

ACTIONS

A.1

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

INSERT 1 (WOG) →

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

or control room boundary

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

D ~~C~~.1, ~~C~~.2.1, and ~~C~~.2.2

[In MODE 5 or 6, or] during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS], if the inoperable CREFS train cannot be restored to OPERABLE status within the required Completion Time, action must be taken to immediately place the OPERABLE CREFS train in the emergency

(continued)

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BASES

ACTIONS

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

mode. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure would 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 risk. This does not preclude the movement of fuel to a safe position.

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

E.1 and E.2

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

F.1

for reasons other than an inoperable control room boundary (i.e., Condition B),

If both CREFS trains are inoperable in MODE 1, 2, 3, or 4, the CREFS 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe,

(continued)

INSERT
LCO NOTE (WOG 3.7.12, ECCS PREACS)

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

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3.7 PLANT SYSTEMS

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

LCO 3.7.12 Two ECCS PREACS trains shall be OPERABLE.

INSERT LCO NOTE

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.~~ C Required Action and associated Completion Time not met.	C ~~B.~~ 1 Be in MODE 3.	6 hours
	AND	
	~~B.~~ 2 C Be in MODE 5.	36 hours
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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Operate each ECCS PREACS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days

(continued)

INSERT

LCO NOTE BASES (WOG 3.7.12, ECCS PREACS)

The LCO is modified by a Note allowing the ECCS pump room boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for ECCS pump room isolation is indicated.

INSERT 2 (WOG)

B.1

[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 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 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.

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BASES

LCO (continued)

a. Fan is OPERABLE;

b. HEPA filter and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions; and

INSERT LCO NOTE BASES

c. Heater, demister, ductwork, valves, and dampers are OPERABLE and air circulation can be maintained.

APPLICABILITY

In MODES 1, 2, 3, and 4, the ECCS PREACS is required to be OPERABLE consistent with the OPERABILITY requirements of the ECCS.

In MODE 5 or 6, the ECCS PREACS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

With one ECCS PREACS train inoperable, action must be taken to restore OPERABLE status within 7 days. During this time, the remaining OPERABLE train is adequate to perform the ECCS PREACS function.

The 7 day Completion Time is appropriate because the risk contribution is less than that for the ECCS (72 hour Completion Time), and this system is not a direct support system for the ECCS. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

Concurrent failure of two ECCS PREACS trains would result in the loss of functional capability; therefore, LCO 3.0.3 must be entered immediately.

INSERT 2 (WOG)

C.1 and C.2

or ECCS pump room boundary

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

(continued)

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BASES

ACTIONS

C.1 and C.2 (continued)

MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

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 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 $\geq$ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for $\geq$ 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.

SR 3.7.12.2

This SR verifies that the required ECCS PREACS testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The ECCS PREACS filter tests are in accordance with Reference 4. The [VFTP] includes testing HEPA filter performance, charcoal adsorbers 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 3.7.12.3

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 Reference 4.

(continued)

INSERT
LCO NOTE (WOG 3.7.13, FBACS)

---------- NOTE ----------
The fuel building boundary may be opened intermittently under administrative control.

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3.7 PLANT SYSTEMS

3.7.13 Fuel Building Air Cleanup System (FBACS)

LCO 3.7.13 Two FBACS trains shall be OPERABLE.

INSERT LCO NOTE

APPLICABILITY: [MODES 1, 2, 3, and 4,]
During movement of irradiated fuel assemblies in the fuel building.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One FBACS train inoperable.	A.1	Restore FBACS train to OPERABLE status.	7 days
INSERT B → B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4. OR Two FBACS trains inoperable in MODE 1, 2, 3, or 4.	C.1 B.1	Be in MODE 3.	6 hours
	AND		
	C.2 B.2	Be in MODE 5.	36 hours
C. Required Action and associated Completion Time [of Condition A] not met during movement of irradiated fuel assemblies in the fuel building.	D.1 C.1	Place OPERABLE FBACS train in operation.	Immediately
	OR		
	D.2 C.2	Suspend movement of irradiated fuel assemblies in the fuel building.	Immediately

(continued)

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B.	Two FBACS trains inoperable due to inoperable fuel building boundary in MODES 1, 2, 3, and 4.	B.1 Restore fuel building boundary to OPERABLE status.	24 hours

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two FBACS trains inoperable during movement of irradiated fuel assemblies in the fuel building.	E.1 Suspend movement of irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Operate each FBACS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days
SR 3.7.13.2	Perform required FBACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
[SR 3.7.13.3	Verify each FBACS train actuates on an actual or simulated actuation signal.	[18] months]
SR 3.7.13.4	Verify one FBACS train can maintain a pressure ≤ [-0.125] inches water gauge with respect to atmospheric pressure during the [post accident] mode of operation at a flow rate ≤ [20,000] cfm.	[18] months on a STAGGERED TEST BASIS

(continued)

INSERT

LCO NOTE BASES (WOG 3.7.13, FBACS)

The LCO is modified by a Note allowing the fuel building boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for fuel building isolation is indicated.

INSERT 3 (WOG)

B.1

[Reviewer's Note: Adoption of Condition B is dependent on a commitment from the licensee to have guidance available describing compensatory measures to be taken in the event of an intentional and unintentional entry into Condition B.]

If the fuel building boundary is inoperable in MODES 1, 2, 3, and 4, the FBACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE fuel building boundary within 24 hours. During the period that the fuel building boundary is inoperable, appropriate compensatory measures 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 fuel building boundary.

BASES (continued) TSTF-287 Rev 4

APPLICABLE SAFETY ANALYSES

The FBACS design basis is established by the consequences of the limiting Design Basis Accident (DBA), which is a fuel handling accident. The analysis of the fuel handling accident, given in Reference 3, assumes that all fuel rods in an assembly are damaged. The analysis of the LOCA assumes that radioactive materials leaked from the Emergency Core Cooling System (ECCS) are filtered and adsorbed by the FBACS. The DBA analysis of the fuel handling accident assumes that only one train of the FBACS is functional due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive material provided by the one remaining train of this filtration system. The amount of fission products available for release from the fuel handling building is determined for a fuel handling accident and for a LOCA. These assumptions and the analysis follow the guidance provided in Regulatory Guide 1.25 (Ref. 4).

The FBACS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two independent and redundant trains of the FBACS are required to be OPERABLE to ensure that at least one train is available, assuming a single failure that disables the other train, coincident with a loss of offsite power. Total system failure could result in the atmospheric release from the fuel handling building exceeding the 10 CFR 100 (Ref. 5) limits in the event of a fuel handling accident.

The FBACS is considered OPERABLE when the individual components necessary to control exposure in the fuel handling building are OPERABLE in both trains. An FBACS train is considered OPERABLE when its associated:

a. Fan is OPERABLE;

b. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration function; and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

INSERT LCO NOTE BASES →

(continued)

BASES (continued) TSTF-287 Rev 4

APPLICABILITY

In MODE 1, 2, 3, or 4, the FBACS is required to be OPERABLE to provide fission product removal associated with ECCS leaks due to a LOCA and leakage from containment and annulus.

In MODE 5 or 6, the FBACS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

During movement of irradiated fuel in the fuel handling area, the FBACS is required to be OPERABLE to alleviate the consequences of a fuel handling accident.

ACTIONS

A.1

With one FBACS train inoperable, action must be taken to restore OPERABLE status within 7 days. During this period, the remaining OPERABLE train is adequate to perform the FBACS function. The 7 day Completion Time is based on the risk from an event occurring requiring the inoperable FBACS train, and the remaining FBACS train providing the required protection.

INSERT 3 (WOG) →

C

B.1 and B.2

C

for reasons other than an inoperable fuel building boundary (i.e., Condition B)

or B.1

In MODE 1, 2, 3, or 4, when Required Action A.1 cannot be completed within the associated Completion Time, or when both FBACS trains are inoperable, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in MODE 3 within 6 hours, and in MODE 5 within 36 hours. The Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

D

B.1 and B.2

D

When Required Action A.1 cannot be completed within the required Completion Time, during movement of irradiated fuel assemblies in the fuel building, the OPERABLE FBACS train must be started immediately or fuel movement suspended. This action ensures that the remaining train is OPERABLE,

(continued)

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BASES

ACTIONS

D D [C.1 and C.2] (continued)

that no undetected failures preventing system operation will occur, and that any active failure will be readily detected.

If the system is not placed in operation, this action requires suspension of fuel movement, which precludes a fuel handling accident. This does not preclude the movement of fuel assemblies to a safe position.

E [B.1]

When two trains of the FBACS are inoperable during movement of irradiated fuel assemblies in the fuel building, action must be taken to place the unit in a condition in which the LCO does not apply. Action must be taken immediately to suspend movement of irradiated fuel assemblies in the fuel building. This does not preclude the movement of fuel to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.7.13.1

Standby systems should be checked periodically to ensure that they function properly. As the environmental 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 accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for $\geq$ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for $\geq$ 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 3.7.13.2

This SR verifies that the required FBACS testing is performed in accordance with the [Ventilation Filter Testing

(continued)

INSERT

LCO NOTE(WOG 3.7.14, PREACS)

---------- NOTE ----------

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

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3.7 PLANT SYSTEMS

3.7.14 Penetration Room Exhaust Air Cleanup System (PREACS)

LCO 3.7.14 Two PREACS trains shall be OPERABLE.

← INSERT LCO NOTE

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.~~ C. Required Action and associated Completion Time not met.	C ~~B~~.1 Be in MODE 3. AND ~~B~~.2 C Be in MODE 5.	6 hours 36 hours
B. Two PREACS trains inoperable due to inoperable penetration room boundary.	B.1 Restore penetration room boundary to OPERABLE status.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.14.1	Operate each PREACS train for [≥ 10 continuous hours with heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days
SR 3.7.14.2	Perform required PREACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]

(continued)

INSERT

LCO NOTE BASES (WOG 3.7.14, PREACS)

The LCO is modified by a Note allowing the penetration room boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for penetration room isolation is indicated.

INSERT 4 (WOG)

B.1

[Reviewer's Note: Adoption of Condition B is dependent on a commitment from the licensee to have guidance available describing compensatory measures to be taken in the event of an intentional and unintentional entry into Condition B.]

If the penetration room boundary is inoperable, the PREACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE penetration room boundary within 24 hours. During the period that the penetration room boundary is inoperable, appropriate compensatory measures 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 penetration room boundary.

BASES (continued) TSTF-287 Rev 4

APPLICABLE SAFETY ANALYSES

The PREACS design basis is established by the large break loss of coolant accident (LOCA). The system evaluation assumes a passive failure outside containment, such as valve packing leakage during a Design Basis Accident (DBA). In such a case, the system restricts the radioactive release to within the 10 CFR 100 (Ref. 4) limits, or the NRC staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits). The analysis of the effects and consequences of a large break LOCA are presented in Reference 3.

Two types of system failures are considered in the accident analysis: a complete loss of function, and excessive LEAKAGE. Either type of failure may result in less efficient removal of any gaseous or particulate material released to the penetration room following a LOCA.

The PREACS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two independent and redundant trains of the PREACS are required to be OPERABLE to ensure that at least one train is available, assuming there is a single failure disabling the other train coincident with a loss of offsite power.

The PREACS is considered OPERABLE when the individual components necessary to control radioactive releases are OPERABLE in both trains. A PREACS train is considered OPERABLE when its associated:

a. Fan is OPERABLE;

b. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions; and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE and air circulation can be maintained.

INSERT LCO NOTE BASES 2

APPLICABILITY

In MODES 1, 2, 3, and 4, the PREACS is required to be OPERABLE, consistent with the OPERABILITY requirements of the Emergency Core Cooling System (ECCS).

(continued)

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BASES

APPLICABILITY (continued)

In MODE 5 or 6, the PREACS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

With one PREACS train inoperable, the action must be taken to restore OPERABLE status within 7 days. During this period, the remaining OPERABLE train is adequate to perform the PREACS function. The 7 day Completion Time is appropriate because the risk contribution of the PREACS is less than that of the ECCS (72 hour Completion Time), and this system is not a direct support system for the ECCS. The 7 day Completion Time is based on the low probability of a DBA occurring during this period, and the remaining train providing the required capability.

INSERT 4 (WOG) →

C B.1 and B.2

or penetration room boundary

If the inoperable train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The 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 3.7.14.1

Standby systems should be checked periodically to ensure that they function properly. As the environmental and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system. Monthly heater operation dries out any moisture that may have accumulated in the charcoal as a result of humidity in the ambient air. [Systems with heaters must be operated for $\geq$ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for $\geq$ 15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on the known

(continued)

INSERT

LCO NOTE (CEOG 3.7.11, CREACS)

---------- NOTE ----------

The control room boundary may be opened intermittently under administrative control.

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3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Cleanup System (CREACS)

LCO 3.7.11 Two CREACS trains shall be OPERABLE.

INSERT LCO NOTE

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREACS train inoperable.	A.1 Restore CREACS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours
C. Required Action and associated Completion Time of Condition A not met [in MODES 5 and 6, or] during movement of irradiated fuel assemblies[, or during CORE ALTERATIONS].	C.1 --------NOTE-------- Place in toxic gas protection mode if automatic transfer to toxic gas mode inoperable. ---------- Place OPERABLE CREACS train in emergency radiation protection mode. OR	Immediately
B. Two CREACS trains inoperable due to inoperable control room boundary in MODES 1, 2, 3, and 4	B.1 Restore control room boundary to OPERABLE status.	24 hours

(continued)

CEOG STS

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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. (continued)	D.2.1 Suspend CORE ALTERATIONS. (D) AND	Immediately
	D.2.2 Suspend movement of irradiated fuel assemblies. (D)	Immediately
D. Two CREACS trains inoperable [in MODES 5 and 6, or] during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS]. (E) for reasons other than Condition B	E.1 Suspend CORE ALTERATIONS. (E) AND	Immediately
	E.2 Suspend movement of irradiated fuel assemblies. (E)	Immediately
E. Two CREACS trains inoperable in MODE 1, 2, 3, or 4. (F)	F.1 Enter LCO 3.0.3. (F)	Immediately

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

(continued)

INSERT

LCO NOTE BASES (CEOG 3.7.11, CREACS)

The LCO is modified by a Note allowing the control room boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for control room isolation is indicated.

INSERT 1 (CEOG)

B.1

[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.

BASES

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APPLICABLE SAFETY ANALYSES (continued)

accident dose analyses for the most limiting design basis loss of coolant accident fission product release presented in the FSAR, Chapter [15] (Ref. 2).

The analysis of toxic gas releases demonstrates that the toxicity limits are not exceeded in the control room following a toxic chemical release, as presented in Reference 1.

The worst case single active failure of a component of the CREACS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

The CREACS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two independent and redundant trains of the CREACS are required to be OPERABLE to ensure that at least one is available, assuming that a single failure disables the other train. Total system failure could result in a control room operator receiving a dose in excess of 5 rem in the event of a large radioactive release.

The CREACS is considered OPERABLE when the individual components necessary to control operator exposure are OPERABLE in both trains. A CREACS train is considered OPERABLE when the associated:

a. Fan is OPERABLE;

b. HEPA filters and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions; and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.

INSERT LCO NOTE BASES →

(continued)

BASES (continued)

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APPLICABILITY

In MODES 1, 2, 3, and 4, the CREACS must be OPERABLE to limit operator exposure during and following a DBA.

In MODES [5 and 6], the CREACS is required to cope with the release from a rupture of an outside waste gas tank.

During movement of irradiated fuel assemblies [and CORE ALTERATIONS], the CREACS must be OPERABLE to cope with the release from a fuel handling accident.

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.

INSERT 1 (CEOG)

C — B.1 and B.2 — C

or control room boundary

If the inoperable CREACS cannot be restored to OPERABLE status within the Required 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.

associated

D — D — D — C.1, C.2.1, and C.2.2 — D

Required Action C.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.

(continued)

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BASES

ACTIONS

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

In MODE 5 or 6, or during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS], 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 and E.2

When [in MODES 5 and 6, or] during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS], with two CREACS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might enter 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

for reasons other than an inoperable control room boundary (i.e., Condition B)

If both CREACS trains are inoperable in MODE 1, 2, 3, or 4, 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.

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,

(continued)

INSERT
LCO NOTE (CEOG 3.7.13, ECCS PREACS)

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

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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.

INSERT LCO NOTE

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. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours
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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.13.1 Operate each ECCS PREACS train for [≥ 10 continuous hours with the heater operating or (for systems without heaters) ≥ 15 minutes].	31 days

(continued)

INSERT

LCO NOTE BASES (CEOG 3.7.13, ECCS PREACS)

The LCO is modified by a Note allowing the ECCS pump room boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for ECCS pump room isolation is indicated.

INSERT 2 (CEOG)

B.1

[Reviewer's Note: Adoption of Condition B is dependent on a commitment from the licensee to have guidance available describing compensatory measures to be taken in the event of an intentional and unintentional entry into Condition B.]

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 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.

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BASES

LCO (continued)

ECCS PREACS is considered OPERABLE when the individual components necessary to maintain the ECCS Pump Room filtration are OPERABLE in both trains.

An ECCS PREACS train is considered OPERABLE when its associated:

a. Fan is OPERABLE;

b. HEPA filter and charcoal adsorber are not excessively restricting flow and are capable of performing their filtration functions; and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

INSERT LCO NOTE BASES

APPLICABILITY

In MODES 1, 2, 3, and 4, the ECCS PREACS is required to be OPERABLE consistent with the OPERABILITY requirements of the ECCS.

In MODES 5 and 6, the ECCS PREACS is not required to be OPERABLE, since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

With one ECCS PREACS train inoperable, action must be taken to restore OPERABLE status within 7 days. During this time, the remaining OPERABLE train is adequate to perform the ECCS PREACS function.

The 7 day Completion Time is appropriate because the risk contribution is less than that for the ECCS (72 hour Completion Time) and this system is not a direct support system for the ECCS. The 7 day Completion Time is reasonable, based on the low probability of a DBA occurring during this time period, and the consideration that the remaining train can provide the required capability.

INSERT 2 (CEOG)

(continued)

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BASES

ACTIONS (continued)

C C
B.1 and B.2

or ECCS pump room boundary

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

SURVEILLANCE REQUIREMENTS

SR 3.7.13.1

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.

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 ECCS PREACS filter tests are in accordance with Regulatory Guide 1.52 (Ref. 4). 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].

(continued)

INSERT
LCO NOTE (CEOG 3.7.14, FBACS)

---------- NOTE ----------
The fuel building boundary may be opened intermittently under administrative control.

TSTF-287 Rev 4

3.7 PLANT SYSTEMS

3.7.14 Fuel Building Air Cleanup System (FBACS)

LCO 3.7.14 Two FBACS trains shall be OPERABLE.

INSERT LCO NOTE

APPLICABILITY: [MODES 1, 2, 3, and 4,]
During movement of irradiated fuel assemblies in the fuel building.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One FBACS train inoperable.	A.1 Restore FBACS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4. OR B OR Two FBACS trains inoperable in MODE 1, 2, 3, or 4. for reasons other than Condition B	B.1 Be in MODE 3. C AND B.2 Be in MODE 5. C	6 hours 36 hours
C. Required Action and Associated Completion Time [of Condition A] not met during movement of irradiated fuel assemblies in the fuel building.	C.1 Place OPERABLE FBACS train in operation. D OR C.2 Suspend movement of irradiated fuel assemblies in the fuel building. D	Immediately Immediately
B. Two FBACS trains inoperable due to inoperable fuel building boundary in MODES 1, 2, 3, and 4 CEOG STS	B.1 Restore fuel building boundary to OPERABLE status.	24 hours

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
[N]. (E) Two FBACS trains inoperable during movement of irradiated fuel assemblies in the fuel building.	[N].1 (E) Suspend movement of irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.14.1	Operate each FBACS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days
SR 3.7.14.2	Perform required FBACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
[SR 3.7.14.3	Verify each FBACS train actuates on an actual or simulated actuation signal.	[18] months]
SR 3.7.14.4	Verify one FBACS train can maintain a negative pressure ≥ [ ] inches water gauge with respect to atmospheric pressure, during the [post accident] mode of operation at a flow rate ≤ [3000] cfm.	[18] months on a STAGGERED TEST BASIS

(continued)

INSERT

LCO NOTE BASES (CEOG 3.7.14, FBACS)

The LCO is modified by a Note allowing the fuel building boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for fuel building isolation is indicated.

INSERT 3 (CEOG)

B.1

[Reviewer's Note: Adoption of Condition B is dependent on a commitment from the licensee to have guidance available describing compensatory measures to be taken in the event of an intentional and unintentional entry into Condition B.]

If the fuel building boundary is inoperable in MODES 1, 2, 3, and 4, the FBACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE fuel building boundary within 24 hours. During the period that the fuel building boundary is inoperable, appropriate compensatory measures 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 fuel building boundary.

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BASES (continued)

APPLICABLE SAFETY ANALYSES

The FBACS is designed to mitigate the consequences of a fuel handling accident in which [all] rods in the fuel assembly are assumed to be damaged. The analysis of the fuel handling accident is given in Reference 3. The Design Basis Accident analysis of the fuel handling accident assumes that only one train of the FBACS is functional, due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive material provided by the remaining one train of this filtration system. The amount of fission products available for release from the fuel handling building is determined for a fuel handling accident. These assumptions and the analysis follow the guidance provided in Regulatory Guide 1.25 (Ref. 4).

The FBACS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two independent and redundant trains of the FBACS are required to be OPERABLE to ensure that at least one is available, assuming a single failure that disables the other train coincident with a loss of offsite power. Total system failure could result in the atmospheric release from the fuel building exceeding the 10 CFR 100 limits (Ref. 5) in the event of a fuel handling accident.

The FBACS is considered OPERABLE when the individual components necessary to control exposure in the fuel handling building are OPERABLE in both trains. An FBACS train is considered OPERABLE when its associated:

a. Fan is OPERABLE;

b. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions; and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

INSERT LCO NOTE BASES

APPLICABILITY

In MODES 1, 2, 3, and 4, the FBACS is required to be OPERABLE to provide fission product removal associated with ECCS leaks due to a LOCA (refer to LCO 3.7.13, "Emergency

(continued)

BASES

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APPLICABILITY (continued)

Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)") for units that use this system as part of their ECCS PREACS.

During movement of irradiated fuel assemblies in the fuel building, the FBACS is required to be OPERABLE to mitigate the consequences of a fuel handling accident.

In MODES 5 and 6, the FBACS is not required to be OPERABLE, since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

If one FBACS train is inoperable, action must be taken to restore OPERABLE status within 7 days. During this time period, the remaining OPERABLE train is adequate to perform the FBACS function. The 7 day Completion Time is reasonable, based on the risk from an event occurring requiring the inoperable FBACS train, and ability of the remaining FBACS train to provide the required protection.

INSERT 3 (CEOG)

C → B.1 and B.2 C

or B.1

In MODE 1, 2, 3, or 4, when Required Action A.1 cannot be completed within the Completion Time, or when both FBACS trains are inoperable, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in 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.

for reasons other than an inoperable fuel building boundary (i.e., Condition B)

D D

C.1 and C.2

When Required Action A.1 cannot be completed within the required Completion Time during movement of irradiated fuel in the fuel building, the OPERABLE FBACS train must be started immediately or fuel movement suspended. This action ensures that the remaining train is OPERABLE, that no undetected failures preventing system operation will occur, and that any active failure will be readily detected.

(continued)

BASES

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ACTIONS

D.1 and D.2 (continued)

If the system is not placed in operation, this action requires suspension of fuel movement, which precludes a fuel handling accident. This does not preclude the movement of fuel to a safe position.

E.1

When two trains of the FBACS are inoperable during movement of irradiated fuel assemblies in the fuel building, action must be taken to place the unit in a condition in which the LCO does not apply. This LCO involves immediately suspending movement of irradiated fuel assemblies in the fuel building. This does not preclude the movement of fuel to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1

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 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 3.7.14.2

This SR verifies the performance of FBACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)]. The FBACS filter tests are in accordance with the Regulatory Guide 1.52 (Ref. 6). 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

(continued)

INSERT

LCO NOTE (CEOG 3.7.15, PREACS)

---------- NOTE ----------

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

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3.7 PLANT SYSTEMS

3.7.15 Penetration Room Exhaust Air Cleanup System (PREACS)

LCO 3.7.15 Two PREACS trains shall be OPERABLE.

INSERT LCO NOTE

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. Required Action and associated Completion Time not met. (C)	B.1 (C) Be in MODE 3. AND B.2 (C) Be in MODE 5.	6 hours 36 hours
B. Two PREACS trains inoperable due to inoperable penetration room boundary.	B.1 Restore penetration room boundary to OPERABLE status.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.15.1	Operate each PREACS train for [≥ 10 continuous hours with the heater operating or (for systems without heaters) ≥ 15 minutes].	31 days
SR 3.7.15.2	Verify required PREACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]

(continued)

INSERT

LCO NOTE BASES (CEOG 3.7.15, PREACS)

The LCO is modified by a Note allowing the penetration room boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for penetration room isolation is indicated.

INSERT 4 (CEOG)

B.1

[Reviewer's Note: Adoption of Condition B is dependent on a commitment from the licensee to have guidance available describing compensatory measures to be taken in the event of an intentional and unintentional entry into Condition B.]

If the penetration room boundary is inoperable, the PREACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE penetration room boundary within 24 hours. During the period that the penetration room boundary is inoperable, appropriate compensatory measures 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 penetration room boundary.

BASES

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BACKGROUND (continued)

consistent with iodine removal efficiencies, as discussed in the Regulatory Guide 1.52 (Ref. 4).

APPLICABLE SAFETY ANALYSES

The design basis of the PREACS is established by the large break loss of coolant accident (LOCA). The system evaluation assumes a passive failure outside containment, such as a valve packing leakage during a Design Basis Accident (DBA). In such a case, the system restricts the radioactive release to within 10 CFR 100 (Ref. 5) limits, or the NRC staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits). The analysis of the effects and consequences of a large break LOCA are presented in Reference 3.

There are two types of system failures considered in the accident analysis: a complete loss of function and an excessive LEAKAGE. Either type of failure may result in less efficient removal for any gaseous or particulate material released to the penetration rooms following a LOCA.

The PREACS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two independent and redundant trains of the PREACS are required to be OPERABLE to ensure that at least one train is available, assuming there is a single failure disabling the other train coincident with a loss of offsite power.

The PREACS is considered OPERABLE when the individual components necessary to control radioactive releases are OPERABLE in both trains. A PREACS train is considered OPERABLE when its associated:

a. Fan is OPERABLE;

b. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing the filtration functions; and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and circulation can be maintained.

INSERT LCO NOTE BASES

(continued)

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BASES (continued)

APPLICABILITY

In MODES 1, 2, 3, and 4, the PREACS is required to be OPERABLE, consistent with the OPERABILITY requirements of the Emergency Core Cooling System (ECCS).

In MODES 5 and 6, the PREACS is not required to be OPERABLE, since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

With one PREACS train inoperable, action must be taken to restore OPERABLE status within 7 days. During this time period, the remaining OPERABLE train is adequate to perform the PREACS function. The 7 day Completion Time is appropriate because the risk contribution of the PREACS is less than that for the ECCS (72 hour Completion Time), and because this system is not a direct support system for the ECCS. The 7 day Completion Time is reasonable, is based on the low probability of a DBA occurring during this time period, and the consideration that the remaining train can provide the required capability.

INSERT 4 (CEOG)

C B.1 and B.2 C

PREACS

or penetration room boundary

If the inoperable train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.15.1

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

(continued)

INSERT

LCO NOTE (BWR/4 3.7.4, MCREC System)

---------- NOTE ----------

The main control room boundary may be opened intermittently under administrative control.

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3.7 PLANT SYSTEMS

3.7.4 [Main Control Room Environmental Control (MCREC)] System

LCO 3.7.4 Two [MCREC] subsystems shall be OPERABLE.

INSERT LCO NOTE

APPLICABILITY: MODES 1, 2, and 3,
During movement of irradiated fuel assemblies in the [secondary] containment,
During CORE ALTERATIONS,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One [MCREC] subsystem inoperable.	A.1 Restore [MCREC] subsystem to OPERABLE status.	7 days
B. (C) Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3. (Or B)	B.1 (C) Be in MODE 3. AND B.2 (C) Be in MODE 4.	12 hours 36 hours

(continued)

B. Two [MCREC] subsystems inoperable due to inoperable control room boundary in MODES 1, 2, and 3.

B.1 Restore control room boundary to OPERABLE status. 24 hours

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the [secondary] containment, during CORE ALTERATIONS, or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ----------	
	C.1 (D) --------NOTE-------- Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable. ---------- Place OPERABLE [MCREC] subsystem in [pressurization] mode.	Immediately
	OR	
	C.2.1 (D) Suspend movement of irradiated fuel assemblies in the [secondary] containment.	Immediately
	AND	
	C.2.2 (D) Suspend CORE ALTERATIONS.	Immediately
	AND	
	C.2.3 (D) Initiate action to suspend OPDRVs.	Immediately
D. Two [MCREC] subsystems inoperable in MODE 1, 2, or 3. (E)	D.1 (E) Enter LCO 3.0.3.	Immediately

for reasons other than Condition B.

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E F. Two [MCREC] subsystems inoperable during movement of irradiated fuel assemblies in the [secondary] containment, during CORE ALTERATIONS, or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ----------	
	E.1 F Suspend movement of irradiated fuel assemblies in the [secondary] containment.	Immediately
	AND	
	E.2 F Suspend CORE ALTERATIONS.	Immediately
	AND	
	E.3 F Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Operate each [MCREC] subsystem for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days
SR 3.7.4.2	Perform required [MCREC] filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]

(continued)

INSERT

LCO NOTE BASES (BWR/4 3.7.4, MCREC System)

The LCO is modified by a Note allowing the main control room boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the main control room. This individual will have a method to rapidly close the opening when a need for main control room isolation is indicated.

INSERT 1 (BWR/4)

B.1

[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 main control room boundary is inoperable in MODES 1, 2, and 3, the MCREC trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE main control room boundary within 24 hours. During the period that the main 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 main control room boundary.

BASES

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BACKGROUND (continued)

room habitability is discussed in the FSAR, Chapters [6] and [9], (Refs. 1 and 2, respectively).

APPLICABLE SAFETY ANALYSES

The ability of the [MCREC] System to maintain the habitability of the control room is an explicit assumption for the safety analyses presented in the FSAR, Chapters [6] and [15] (Refs. 1 and 3, respectively). The pressurization mode of the [MCREC] System is assumed to operate following a loss of coolant accident, fuel handling accident, main steam line break, and control rod drop accident, as discussed in the FSAR, Section [6.4.1.2.2] (Ref. 4). The radiological doses to control room personnel as a result of the various DBAs are summarized in Reference 3. No single active or passive failure will cause the loss of outside or recirculated air from the control room.

The [MCREC] System satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two redundant subsystems of the [MCREC] System are required to be OPERABLE to ensure that at least one is available, assuming a single failure disables the other subsystem. Total system failure could result in exceeding a dose of 5 rem to the control room operators in the event of a DBA.

The [MCREC] System is considered OPERABLE when the individual components necessary to control operator exposure are OPERABLE in both subsystems. A subsystem is considered OPERABLE when its associated:

a. Fan is OPERABLE;

b. HEPA filter and charcoal adsorbers are not excessively restricting flow and are capable of performing their filtration functions; and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.

INSERT LCO NOTE BASES 2 →

(continued)

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BASES (continued)

APPLICABILITY

In MODES 1, 2, and 3, the [MCREC] System must be OPERABLE to control operator exposure during and following a DBA, since the DBA could lead to a fission product release.

In MODES 4 and 5, the probability and consequences of a DBA are reduced because of the pressure and temperature limitations in these MODES. Therefore, maintaining the [MCREC] System OPERABLE is not required in MODE 4 or 5, except for the following situations under which significant radioactive releases can be postulated:

a. During operations with potential for draining the reactor vessel (OPDRVs);

b. During CORE ALTERATIONS; and

c. During movement of irradiated fuel assemblies in the [secondary] containment.

ACTIONS

A.1

With one [MCREC] subsystem inoperable, the inoperable [MCREC] subsystem must be restored to OPERABLE status within 7 days. With the unit in this condition, the remaining OPERABLE [MCREC] subsystem is adequate to perform control room radiation protection. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in reduced [MCREC] System capability. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and that the remaining subsystem can provide the required capabilities.

INSERT 1 (BWR4)

C B.1 and B.2 C

or control room boundary

In MODE 1, 2, or 3, if the inoperable [MCREC] subsystem cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE that minimizes risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 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.

(continued)

TSTF-287 Rev 4

BASES

ACTIONS
(continued)

D.1, D.2.1, D.2.2, and D.2.3

The Required Actions of Condition D are modified by a Note indicating that LCO 3.0.3 does not apply. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

During movement of irradiated fuel assemblies in the [secondary] containment, during CORE ALTERATIONS, or during OPDRVs, if the inoperable [MCREC] subsystem cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE [MCREC] subsystem may be placed in the pressurization mode. This action ensures that the remaining subsystem is OPERABLE, that no failures that would prevent automatic actuation will occur, and that any active failure will be readily detected.

Required Action D.1 is modified by a Note alerting the operator to [place the system in the toxic gas protection mode if the toxic gas automatic transfer capability is inoperable].

An alternative to Required Action D.1 is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk.

If applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies in the [secondary] containment must be suspended immediately. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be initiated immediately to suspend OPDRVs to minimize the probability of a vessel draindown and the subsequent potential for fission product release. Actions must continue until the OPDRVs are suspended.

E.1

If both [MCREC] subsystems are inoperable in MODE 1, 2, or 3, the [MCREC] System may not be capable of performing

for reasons other than an inoperable control room boundary (i.e., Condition B)

(continued)

BASES

TSTF-287 Rev 4

ACTIONS

E

N.1 (continued)

the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

F F F

N.1, N.2, and N.3

F

The Required Actions of Condition N are modified by a Note indicating that LCO 3.0.3 does not apply. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

During movement of irradiated fuel assemblies in the [secondary] containment, during CORE ALTERATIONS, or during OPDRVs, with two [MCREC] subsystems inoperable, action must be taken immediately to suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk.

If applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies in the [secondary] containment must be suspended immediately. Suspension of these activities shall not preclude completion of movement of a component to a safe position. If applicable, actions must be initiated immediately to suspend OPDVRs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until the OPDRVs are suspended.

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

This SR verifies that a subsystem in a standby mode starts on demand and continues to operate. Standby systems should be checked periodically to ensure that they start and function properly. As the environmental and normal operating conditions of this system are not severe, testing each subsystem once every month provides an adequate check on this system. Monthly heater operation dries out any

(continued)

INSERT

LCO NOTE (BWR/6 3.7.3, CRFA System)

---------- NOTE ----------

The control room boundary may be opened intermittently under administrative control.

TSTF-287 Rev 4

3.7 PLANT SYSTEM

3.7.3 [Control Room Fresh Air (CRFA)] System

LCO 3.7.3 Two [CRFA] subsystems shall be OPERABLE.

INSERT LCO NOTE

APPLICABILITY: MODES 1, 2, and 3,
During movement of irradiated fuel assemblies in the [primary or secondary containment],
During CORE ALTERATIONS,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One [CRFA] subsystem inoperable.	A.1 Restore [CRFA] subsystem to OPERABLE status.	7 days
C B. Required Action and Associated Completion Time of Condition A not met in MODE 1, 2, or 3. or B	C B.1 Be in MODE 3. AND C B.2 Be in MODE 4.	12 hours 36 hours
B. Two [CRFA] subsystems inoperable due to inoperable control room boundary in MODES 1, 2, and 3,	B.1 Restore control room boundary to OPERABLE status.	24 hours

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the [primary or secondary containment], during CORE ALTERATIONS, or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ----------	
	D.1 -------NOTE--------- Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable. ---------- Place OPERABLE [CRFA] subsystem in [isolation] mode.	Immediately
	OR	
	D.2.1 Suspend movement of irradiated fuel assemblies in the [primary and secondary containment].	Immediately
	AND	
	D.2.2 Suspend CORE ALTERATIONS.	Immediately
	AND	
	D.2.3 Initiate action to suspend OPDRVs.	Immediately
E. Two [CRFA] subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.	E.1 Enter LCO 3.0.3.	Immediately

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F G. Two [CRFA] subsystems inoperable during movement of irradiated fuel assemblies in the [primary or secondary containment], during CORE ALTERATIONS, or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ----------	
	F.1 Suspend movement of irradiated fuel assemblies in the [primary and secondary containment].	Immediately
	AND	
	F.2 Suspend CORE ALTERATIONS.	Immediately
	AND	
	F.3 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Operate each [CRFA] subsystem for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days
SR 3.7.3.2	Perform required [CRFA] filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]

(continued)

INSERT

LCO NOTE BASES (BWR/6 3.7.3, CRFA System)

The LCO is modified by a Note allowing the control room boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for control room isolation is indicated.

INSERT 1 (BWR/6)

B.1

[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, and 3, the CRFA 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.

BASES (continued)

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APPLICABLE SAFETY ANALYSES

The ability of the [CRFA] System to maintain the habitability of the control room is an explicit assumption for the safety analyses presented in the FSAR, Chapters [6] and [15] (Refs. 3 and 4, respectively). The isolation mode of the [CRFA] System is assumed to operate following a loss of coolant accident, main steam line break fuel handling accident, and control rod drop accident. The radiological doses to control room personnel as a result of the various DBAs are summarized in Reference 4. No single active or passive failure will cause the loss of outside or recirculated air from the control room.

The [CRFA] System satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two redundant subsystems of the [CRFA] System are required to be OPERABLE to ensure that at least one is available, assuming a single failure disables the other subsystem. Total system failure could result in exceeding a dose of 5 rem to the control room operators in the event of a DBA.

The [CRFA] System is considered OPERABLE when the individual components necessary to control operator exposure are OPERABLE in both subsystems. A subsystem is considered OPERABLE when its associated:

a. Fan is OPERABLE;

b. HEPA filter and charcoal adsorber are not excessively restricting flow and are capable of performing their filtration functions; and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

INSERT LCO NOTE BASES

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.

APPLICABILITY

In MODES 1, 2, and 3, the [CRFA] System must be OPERABLE to control operator exposure during and following a DBA, since the DBA could lead to a fission product release.

(continued)

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BASES

APPLICABILITY (continued)

In MODES 4 and 5, the probability and consequences of a DBA are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining the [CRFA] System OPERABLE is not required in MODE 4 or 5, except for the following situations under which significant radioactive releases can be postulated:

a. During operations with a potential for draining the reactor vessel (OPDRVs);

b. During CORE ALTERATIONS; and

c. During movement of irradiated fuel assemblies in the [primary or secondary containment].

ACTIONS

A.1

With one [CRFA] subsystem inoperable, the inoperable [CRFA] subsystem must be restored to OPERABLE status within 7 days. With the unit in this condition, the remaining OPERABLE [CRFA] subsystem is adequate to perform control room radiation protection. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in loss of [CRFA] System function. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and that the remaining subsystem can provide the required capabilities.

INSERT 1 (BWR6)

C B.1 and B.2 C

or control room boundary

In MODE 1, 2, or 3, if the inoperable [CRFA] subsystem cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE that minimizes risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 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.

(continued)

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BASES

ACTIONS (continued)

D.1, D.2.1, D.2.2, and D.2.3

The Required Actions of Condition D are modified by a Note indicating that LCO 3.0.3 does not apply. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

During movement of irradiated fuel assemblies in the [primary or secondary containment], during CORE ALTERATIONS, or during OPDRVs, if the inoperable [CRFA] subsystem cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE [CRFA] subsystem may be placed in the isolation mode. This action ensures that the remaining subsystem is OPERABLE, that no failures that would prevent automatic actuation will occur, and that any active failure will be readily detected.

Required Action C.1 is modified by a Note alerting the operator to [place the system in the toxic gas protection mode if the toxic gas, automatic transfer capability is inoperable].

An alternative to Required Action D.1 is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk.

If applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies in the [primary and secondary containment] must be suspended immediately. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be initiated immediately to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until the OPDRVs are suspended.

(continued)

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BASES

ACTIONS (continued)

E

D.1

for reasons other than an inoperable control room boundary (i.e., Condition B)

If both [CRFA] subsystems are inoperable in MODE 1, 2, or 3, the [CRFA] System may not be capable of performing the intended function and the unit is in a condition outside of the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

F E F

F.1, F.2, and F.3

F

The Required Actions of Condition F are modified by a Note indicating that LCO 3.0.3 does not apply. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

During movement of irradiated fuel assemblies in the [primary or secondary containment], during CORE ALTERATIONS, or during OPDRVs, with two [CRFA] subsystems inoperable, action must be taken immediately to suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk.

If applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies in the [primary and secondary containment] must be suspended immediately. Suspension of these activities shall not preclude completion of movement of a component to a safe position. If applicable, actions must be initiated immediately to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until the OPDRVs are suspended.

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

This SR verifies that a subsystem in a standby mode starts on demand and continues to operate. Standby systems should be checked periodically to ensure that they start and function properly. As the environmental and normal operating conditions of this system are not severe, testing

(continued)

Industry/TSTF Standard Technical Specification Change Traveler

Addition of Required Action C.1 to 3.3.2.2, Feedwater - Main Turbine High Water Level Trip Inst.

Classification: 3) Improve Specifications

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

Description:

NUREG-1433, LCO 3.3.2.2 Required Action C.1 requires that THERMAL POWER be reduced to less than 25% RTP within 4 hours. This change adds a new Required Action and a corresponding Note to allow affected feedwater pumps and main turbine valve(s) to be removed from service. The change is necessary to allow components to be removed from service to fulfill the safety function without requiring a reduction in power to < 25% RTP. A similar Note is added to LCO 3.3.4.1 (EOC-RPT) Required Action C.1 and LCO 3.3.4.2 (ATWS RPT) Required Action D.1 to provide the same clarification for when the associated Required Action is the appropriate Action.

Justification:

This change is acceptable because it provides operational flexibility, which could prevent an unnecessary reduction in power to less than 25% RTP. For example, if the required instrument trip Function is degraded only to the point of rendering main feed pump(s) incapable of tripping on reactor vessel high water level, the affected main feed pump(s) and main turbine valve(s) can be removed from service (satisfying the safety function). In this condition, although the trip function is not considered OPERABLE, the safety function has been implemented and therefore, no additional compensatory actions are necessary. For LCO 3.3.4.1 and LCO 3.3.4.2, the change is required to provide a consistent clarification of when the associated Required Actions are the appropriate Action.

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Revision History

OG Revision 0 Revision Status: Closed

Revision Proposed by: Susquehanna

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 13-Aug-97

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 11-Feb-98

TSTF Review Information

TSTF Received Date: 11-Feb-98 Date Distributed for Review 28-May-98

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

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 10-Jul-98

OG Revision 0 Revision Status: Closed

NRC Review Information

NRC Received Date: 13-Nov-98

NRC Comments:

NRC requested change.

Final Resolution: Superceded by Revision Final Resolution Date:

TSTF Revision 1 Revision Status: Active Next Action: NRC

Revision Proposed by: NRC

Revision Description:
There are only three instrumentation LCOs in NUREG-1433 which do not address the actuated devices. This revision inserts a Note over the associated Condition of each of these three LCOs (Feedwater and Main Turbine High Water Level Trip Instrumentation, ATWS-RPT Instrumentation, and EOC-RPT Instrumentation) to clarify the situations under which the associated Required Action would the be appropriate Action.

TSTF Review Information

TSTF Received Date: 18-Nov-99 Date Distributed for Review 18-Nov-99

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

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 18-Nov-99

Incorporation Into the NUREGs

File to BBS/LAN Date: TSTF Informed Date: TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

Action 3.3.2.2.C	Feedwater and Main Turbine High Water Level Trip Instrumentation	NUREG(s)- 1433 Only
Action 3.3.2.2.C Bases	Feedwater and Main Turbine High Water Level Trip Instrumentation	NUREG(s)- 1433 Only
Action 3.3.4.1.C	EOC-RPT	NUREG(s)- 1433 Only
Action 3.3.4.1.C Bases	EOC-RPT	NUREG(s)- 1433 Only
Action 3.3.4.2.D	ATWS RPT	
Action 3.3.4.2.D Bases	ATWS RPT	

Bases Insert 1

Required Action C.1 is modified by a Note which states that the Required Action is only applicable if the inoperable channel is the result of an inoperable feedwater pump [valve] or main turbine stop valve. The Note clarifies the situations under which the associated Required Action would be the appropriate Required Action.

Bases Insert 2

Required Action C.1 is modified by a Note which states that the Required Action is only applicable if the inoperable channel is the result of an RPT breaker. The Note clarifies the situations under which the associated Required Action would be the appropriate Required Action.

Bases Insert 3

Required Action D.1 is modified by a Note which states that the Required Action is only applicable if the inoperable channel is the result of an RPT breaker. The Note clarifies the situations under which the associated Required Action would be the appropriate Required Action.

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3.3 INSTRUMENTATION

3.3.2.2 Feedwater and Main Turbine High Water Level Trip Instrumentation

LCO 3.3.2.2 [Three] channels of feedwater and main turbine high water level trip instrumentation shall be OPERABLE.

APPLICABILITY: THERMAL POWER ≥ [25]% RTP.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One feedwater and main turbine high water level trip channel inoperable.	A.1 Place channel in trip.	7 days
B. Two or more feedwater and main turbine high water level trip channels inoperable.	B.1 Restore feedwater and main turbine high water level trip capability.	2 hours
C. Required Action and associated Completion Time not met.	OR C.~~1~~ 2 Reduce THERMAL POWER to < [25]% RTP.	4 hours

---Note---
Only applicable if inoperable channel is the result of inoperable feedwater pump [valve] or main turbine stop valve.

C.1 Remove affected feedwater pump(s) and main turbine valve(s) from service. | 4 hours

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Rev 1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with EOC-RPT trip capability not maintained. [AND MCPR limit for inoperable EOC-RPT not made applicable.]	B.1 Restore EOC-RPT trip capability. OR B.2 Apply the MCPR limit for inoperable EOC-RPT as specified in the COLR.	2 hours [2 hours]
C. Required Action and associated Completion Time not met.	C.1 Remove the ~~associated~~ affected recirculation pump from service. OR C.2 Reduce THERMAL POWER to < [30]% RTP.	4 hours 4 hours

Note
Only applicable if inoperable channel is the result of an inoperable RPT breaker.

SURVEILLANCE REQUIREMENTS

NOTE
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains EOC-RPT trip capability.

SURVEILLANCE	FREQUENCY
SR 3.3.4.1.1 Perform CHANNEL FUNCTIONAL TEST.	[92] days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One Function with ATWS-RPT trip capability not maintained.	B.1 Restore ATWS-RPT trip capability.	72 hours
C. Both Functions with ATWS-RPT trip capability not maintained.	C.1 Restore ATWS-RPT trip capability for one Function.	1 hour
D. Required Action and associated Completion Time not met.	D.1 Remove the ~~associated~~ affected recirculation pump from service. OR D.2 Be in MODE 2.	6 hours 6 hours

Note
Only applicable if inoperable channel is the result of an inoperable RPT breaker.

SURVEILLANCE REQUIREMENTS

NOTE
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ATWS-RPT trip capability.

SURVEILLANCE	FREQUENCY
SR 3.3.4.2.1 Perform CHANNEL CHECK.	12 hours

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One Function with ATWS-RPT trip capability not maintained.	B.1 Restore ATWS-RPT trip capability.	72 hours
C. Both Functions with ATWS-RPT trip capability not maintained.	C.1 Restore ATWS-RPT trip capability for one Function.	1 hour
D. Required Action and associated Completion Time not met.	D.1 Remove the ~~associated~~ affected recirculation pump from service. OR D.2 Be in MODE 2.	6 hours 6 hours

NOTE
Only applicable if inoperable channel is the result of an inoperable RPT breaker.

SURVEILLANCE REQUIREMENTS

NOTE
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ATWS-RPT trip capability.

SURVEILLANCE	FREQUENCY
SR 3.3.4.2.1 Perform CHANNEL CHECK.	12 hours

(continued)

ACTIONS (continued)

BASES INSERT 1

C.1 and C.2

With the required channels not restored to OPERABLE status or placed in trip, THERMAL POWER must be reduced to < 25% RTP within 4 hours. As discussed in the Applicability section of the Bases, operation below 25% RTP results in sufficient margin to the required limits, and the feedwater and main turbine high water level trip instrumentation is not required to protect fuel integrity during the feedwater controller failure, maximum demand event. The allowed Completion Time of 4 hours is based on operating experience to reduce THERMAL POWER to < 25% RTP from full power conditions in an orderly manner and without challenging plant systems.

Alternatively, the affected feedwater pump and affected main turbine valve may be removed from service since this performs the intended function of the instrumentation.

SURVEILLANCE REQUIREMENTS

Reviewer's Note: Certain Frequencies are based on approved topical reports. In order for a licensee to use these Frequencies the licensee must justify the Frequencies as required by the staff Safety Evaluation Report (SER) for the topical report.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains feedwater and main turbine high water level trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 2) assumption that 6 hours is the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the feedwater pump turbines and main turbine will trip when necessary.

SR 3.3.2.2.1

Performance of the CHANNEL CHECK once every 24 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter

(continued)

ACTIONS

B.1 and B.2 (continued)

be OPERABLE or in trip. Alternately, Required Action B.2 requires the MCPR limit for inoperable EOC-RPT, as specified in the COLR, to be applied. This also restores the margin to MCPR assumed in the safety analysis.

The 2 hour Completion Time is sufficient time for the operator to take corrective action, and takes into account the likelihood of an event requiring actuation of the EOC-RPT instrumentation during this period. It is also consistent with the 2 hour Completion Time provided in LCO 3.2.2 for Required Action A.1, since this instrumentation's purpose is to preclude a MCPR violation.

C.1 and C.2

BASES INSERT 2

With any Required Action and associated Completion Time not met, THERMAL POWER must be reduced to < 30% RTP within 4 hours. Alternately, the associated recirculation pump may be removed from service, since this performs the intended function of the instrumentation. The allowed Completion Time of 4 hours is reasonable, based on operating experience, to reduce THERMAL POWER to < 30% RTP from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

Reviewer's Note: Certain Frequencies are based on approved topical reports. In order for a licensee to use these Frequencies, the licensee must justify the Frequencies as required by the staff SER for the topical report.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains EOC-RPT trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 5) assumption of the average time required to perform channel Surveillance. That

(continued)

ACTIONS

D.1 and D.2 (continued)

BASES INSERT 3

performs the intended function of the instrumentation (Required Action D.1). The allowed Completion Time of 6 hours is reasonable, based on operating experience, both to reach MODE 2 from full power conditions and to remove a recirculation pump from service in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

Reviewer's Note: Certain Frequencies are based on approved topical reports. In order for a licensee to use these times, the licensee must justify the Frequencies as required by the staff Safety Evaluation Report for the topical report.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into the associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ATWS-RPT trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 2) assumption of the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the recirculation pumps will trip when necessary.

SR 3.3.4.2.1

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

(continued)

TSTF-297, Rev. 1

BASES

ACTIONS

D.1 and D.2 (continued)

performs the intended Function of the instrumentation (Required Action D.1). The allowed Completion Time of 6 hours is reasonable, based on operating experience, both to reach MODE 2 from full power conditions and to remove a recirculation pump from service in an orderly manner and without challenging plant systems.

Bases Insert 3

SURVEILLANCE REQUIREMENTS

Reviewer's Note: Certain Frequencies are based on approved topical reports. In order for a licensee to use these Frequencies, the licensee must justify the Frequencies as required by the staff SER for the topical report.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ATWS-RPT trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 2) assumption of the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the recirculation pumps will trip when necessary.

SR 3.3.4.2.1

Performance of the CHANNEL CHECK once every 12 hours ensures that gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying that the

(continued)

Industry/TSTF Standard Technical Specification Change Traveler

Allow 7 day Completion Time for a turbine-driven AFW pump inoperable

Classification: 3) Improve Specifications

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

Description:

Present specifications have a 72 hour Completion Time for any inoperable AFW pump with an Action to be in MODE 4 within 18 hours if the 72 hour Completion Time is not met. The proposed change would allow a 7 day Completion Time for the turbine-driven AFW pump if the inoperability occurs in MODE 3. The Completion Time would be reduced to 6 hours since the plant is already in MODE 3.

Justification:

This change will reduce the number of unnecessary MODE changes and requests for enforcement discretion by providing added flexibility in MODE 3 to repair and test the turbine-driven AFW pump following a refueling outage.

Industry Contact:	Weber, Tom	(602) 393-5764	tweber01@apsc.com
NRC Contact:	Harbuck, Craig	301-415-3140	cch@nrc.gov

Revision History

OG Revision 0 — Revision Status: Closed

Revision Proposed by: NRC

Revision Description:
Original Issue

TSTF Review Information

TSTF Received Date: 25-Sep-97 Date Distributed for Review 12-Oct-98

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

TSTF Comments:

Change is confusing. TSTF agrees with concept but needs better presentation. Tom Weber to provide a revision.

TSTF Resolution: Rejected Date: 20-Nov-98

OG Revision 1 — Revision Status: Closed

Revision Proposed by: TSTF

Revision Description:
The TSTF proposes a revision to NRC TSB-15. The NRC's proposed change allows a steam driven AFW pump to be inoperable for 7 days in MODE 3 following a refueling outage, if MODE 2 had not been entered. The justification was the minimal decay heat levels under this Condition, the redundant capabilities afforded by the AFW system, the time needed to perform repairs and testing of the turbine-driven pump, and the low probability of a DBA occurring during this time period that would require the operation of the turbine driven pump. All of these arguments, except the minimal decay heat level, would apply any time a turbine driven AFW pump is inoperable (including turbine driven AFW pump inoperability due to a single steam supply being OPERABLE). In addition, the decay heat level is not limiting because the motor driven AFW pumps are capable of removing the decay heat and alternate methods, such as feed and bleed, are also

OG Revision 1 Revision Status: Closed

available to remove decay heat if necessary. Therefore, the TSTF proposes that the 7 day AOT (with 10 day maximum with the LCO not met) be available anytime a turbine driven AFW pump is inoperable. This revision reflects this proposal.

TSTF Review Information

TSTF Received Date: 01-Jun-99 Date Distributed for Review 15-Jun-99

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

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 15-Jun-99

NRC Review Information

NRC Received Date: 23-Jun-99

NRC Comments:

8/31/99 - NRC will recommend reject. TSTF will provide a revision to address the issues of (1) the inoperability of the turbine pump being in MODE 3 and (2) the TS markups and Bases being consistent with the proposed change and (3) revise Actions to address the different MODES.

10/6/99 - NRC requests a revision to enhance the justification and provide Bases words that indicate that one steam supply creates the system being inoperable.

Final Resolution: Superceded by Revision Final Resolution Date: 13-Oct-99

TSTF Revision 1 Revision Status: Closed

Revision Proposed by: NRC

Revision Description:
Revised to incorporate NRC comments. The Revision 0 description is enhanced and additional Bases are provided to indicate that one steam supply inoperable results in the system being inoperable.

TSTF Review Information

TSTF Received Date: 03-Nov-99 Date Distributed for Review

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

TSTF Comments:

(No Comments)

TSTF Resolution: Withdrawn Date:

TSTF Revision 2 Revision Status: Active Next Action: NRC

Revision Proposed by: TSTF

Revision Description:
Revised to return to original intent of NRC TSB-15. Revised NRC proposal to consolidate Condition A and proposed Condition B to improve readability and to be more consistent with ITS usage rules.

TSTF Revision 2 **Revision Status: Active** **Next Action: NRC**

TSTF Review Information

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

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

TSTF Comments:

WOG - Justification should refer to "enforcement discretion" instead of "waiver of compliance" and inserted Bases should be consolidated to reduce duplication.

TSTF Resolution: Approved Date: 14-Dec-99

NRC Review Information

NRC Received Date: 23-Dec-99

NRC Comments:

(No Comments)

Final Resolution: NRC Action Pending Final Resolution Date:

Incorporation Into the NUREGs

File to BBS/LAN Date: TSTF Informed Date: TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

Action 3.7.5.A	EFW system	NUREG(s)- 1430 Only
Action 3.7.5.A Bases	EFW system	NUREG(s)- 1430 Only
Action 3.7.5.A	AFW system	NUREG(s)- 1431 1432 Only
Action 3.7.5.A Bases	AFW system	NUREG(s)- 1431 1432 Only

INSERT 1

OR --------- NOTE ------ Only applicable if MODE 2 has not been entered subsequent to the current refueling outage ---------- One turbine driven EFW pump inoperable in MODE 3 following a refueling outage.	

INSERT 2

a. For the inoperability of a steam supply to the turbine driven EFW pump, the 7 day Completion time is reasonable since there is a redundant steam supply line for the turbine driven pump.

b. For the inoperability of a turbine driven EFW pump while in MODE 3 immediately subsequent to a refueling outage, the 7 day Completion time is reasonable due to the minimal decay heat levels in this situation.

c. For both the inoperability of a steam supply line to the turbine driven pump and an inoperable turbine driven EFW pump while in MODE 3 immediately following a refueling outage, the 7 day Completion time is reasonable due to the availability of redundant OPERABLE motor driven EFW pumps; and due to the low probability of an event requiring the use of the turbine driven EFW pump.

INSERT 3

OR --------- NOTE ------ Only applicable if MODE 2 has not been entered subsequent to the current refueling outage ---------- One turbine driven AFW pump inoperable in MODE 3 following a refueling outage.		

INSERT 4

a. For the inoperability of a steam supply to the turbine driven AFW pump, the 7 day Completion time is reasonable since there is a redundant steam supply line for the turbine driven pump.

b. For the inoperability of a turbine driven AFW pump while in MODE 3 immediately subsequent to a refueling outage, the 7 day Completion time is reasonable due to the minimal decay heat levels in this situation.

c. For both the inoperability of a steam supply line to the turbine driven pump and an inoperable turbine driven AFW pump while in MODE 3 immediately following a refueling outage, the 7 day Completion time is reasonable due to the availability of redundant OPERABLE motor driven AFW pumps; and due to the low probability of an event requiring the use of the turbine driven AFW pump.

TSTF-340, Rev.2

3.7 PLANT SYSTEMS

3.7.5 Emergency Feedwater (EFW) System

LCO 3.7.5 [Three] EFW trains shall be OPERABLE.

---NOTE---
Only one EFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One steam supply to turbine driven EFW pump inoperable.	A.1 Restore ~~steam supply~~ affected equipment to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO
B. One EFW train inoperable [for reasons other than Condition A] in MODE 1, 2, or 3.	B.1 Restore EFW train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the LCO

(continued)

Insert 1

TSTF-340, Rev. 2

BASES

APPLICABILITY (continued)

In MODE 4, with RCS temperature above [212]°F, the EFW System may be used for heat removal via the steam generators. In MODE 4, the steam generators are used for heat removal until the DHR System is in operation.

In MODES 5 and 6, the steam generators are not used for DHR and the EFW System is not required.

ACTIONS

A.1

Or if a turbine driven pump is inoperable while in MODES immediately following a refueling outage,

With one of the two steam supplies to the turbine driven EFW pump inoperable, action must be taken to restore the steam supply to OPERABLE status within 7 days. The 7 day Completion Time is reasonable, based on the following reasons:

Insert 2

a. The redundant OPERABLE steam supply to the turbine driven EFW pump(s);

b. The availability of the redundant OPERABLE motor driven EFW pump; and

c. The low probability of an event occurring that would require the inoperable steam supply to the turbine driven EFW pump(s).

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO.

The 10 day Completion Time provides a limitation time allowed in this specified Condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The AND connector between 72 hours and 10 days dictates that both Completion Times apply simultaneously, and the more restrictive must be met.

B.1

When one of the required EFW trains (pump or flow path) is inoperable, action must be taken to restore the train to

(continued)

TSTF-340, Rev 2

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

LCO 3.7.5 [Three] AFW trains shall be OPERABLE.

---NOTE---
Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One steam supply to turbine driven AFW pump inoperable.	A.1 Restore ~~steam supply~~ affected equipment to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO
B. One AFW train inoperable in MODE 1, 2 or 3 [for reasons other than Condition A].	B.1 Restore AFW train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the LCO

(continued)

Insert 3

TSTF-340, Rev 2

BASES

LCO (continued)

of the MSIVs, and shall be capable of supplying AFW to any of the steam generators. The piping, valves, instrumentation, and controls in the required flow paths also are required to be OPERABLE.

The LCO is modified by a Note indicating that one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4. This is because of the reduced heat removal requirements and short period of time in MODE 4 during which the AFW is required and the insufficient steam available in MODE 4 to power the turbine driven AFW pump.

APPLICABILITY

In MODES 1, 2, and 3, the AFW System is required to be OPERABLE in the event that it is called upon to function when the MFW is lost. In addition, the AFW System is required to supply enough makeup water to replace the steam generator secondary inventory, lost as the unit cools to MODE 4 conditions.

In MODE 4 the AFW System may be used for heat removal via the steam generators.

In MODE 5 or 6, the steam generators are not normally used for heat removal, and the AFW System is not required.

ACTIONS

A.1 or if a turbine driven pump is inoperable while in MODE 3 immediately following a refueling outage,

If one of the two steam supplies to the turbine driven AFW train is inoperable, action must be taken to restore OPERABLE status within 7 days. The 7 day Completion Time is reasonable, based on the following reasons:

a. The redundant OPERABLE steam supply to the turbine driven AFW pump;

b. The availability of redundant OPERABLE motor driven AFW pumps; and

c. The low probability of an event occurring that requires the inoperable steam supply to the turbine driven AFW pump.

(continued)

TSTF-340, Rev. 2

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

LCO 3.7.5 [Three] AFW trains shall be OPERABLE.

---NOTE---
Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One steam supply to turbine driven AFW pump inoperable.	A.1 Restore ~~steam supply~~ affected equipment to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO
B. One AFW train inoperable [for reasons other than Condition A] in MODE 1, 2, or 3.	B.1 Restore AFW train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the LCO

(continued)

Insert 3

TSTF-340, Rev.2

BASES

LCO (continued)

The LCO is modified by a Note indicating that only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4. This is because of reduced heat removal requirements, the short period of time in MODE 4 during which AFW is required, and the insufficient steam supply available in MODE 4 to power the turbine driven AFW pump.

APPLICABILITY

In MODES 1, 2, and 3, the AFW System is required to be OPERABLE and to function in the event that the MFW is lost. In addition, the AFW System is required to supply enough makeup water to replace steam generator secondary inventory, lost as the unit cools to MODE 4 conditions.

In MODE 4, the AFW System may be used for heat removal via the steam generator.

In MODES 5 and 6, the steam generators are not normally used for decay heat removal, and the AFW System is not required.

ACTIONS

Or if a turbine driven pump is inoperable while in MODE 3 immediately following a refueling outage,

A.1

If one of the two steam supplies to the turbine driven AFW pumps is inoperable, action must be taken to restore OPERABLE status within 7 days. The 7 day Completion Time is reasonable based on the following reasons:

a. The redundant OPERABLE steam supply to the turbine driven AFW pump;

b. The availability of redundant OPERABLE motor driven AFW pumps; and

c. The low probability of an event requiring the inoperable steam supply to the turbine driven AFW pump.

Insert 4

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO.

(continued)

Industry/TSTF Standard Technical Specification Change Traveler

Remove references to the onsite review function

Classification: Correct Specifications

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

Description:

Description and requirements on the onsite review function were eliminated in Revision 1 of the ITS NUREGs. However, Specifications 3.3.1, 3.3.2, 3.3.5 and 3.3.7 (CEOG Digital only) require continued operation with a bypassed protective channel to be reviewed in accordance with Specification 5.5.1.2.e. There is no 5.5.1.2.e in Revision 1 of NUREG-1432. The Bases for this specification state that this note is to ensure review by the onsite review committee. These notes and Bases are revised to eliminate reference to the onsite review function.
A search of all ITS NUREGs for references to the onsite review function discovered that the BWR/4 and BWR/6 ODCM program descriptions contain a requirement for changes to the ODCM to be reviewed and approved by the onsite review function and approved by the [Plant Superintendent]. These paragraphs are revised to be consistent with the PWR ITS NUREGs which only require approval by the [Plant Superintendent].

Justification:

The onsite review committee review and audit functions have been relocated to licensee controlled documents. The committee review of operation with a bypassed protective channel and ODCM control procedures will be relocated with the other review and audit functions to licensee-controlled documents.

Affected Technical Specifications

Action 3.3.1	RPS Instrumentation - Operating (Digital) Change Description: Actions Note	NUREG(s)- 1432 Only
Action 3.3.1 Bases	RPS Instrumentation - Operating (Digital)	NUREG(s)- 1432 Only
Action 3.3.2	RPS Instrumentation - Shutdown (Digital) Change Description: Actions Note	NUREG(s)- 1432 Only
Action 3.3.2 Bases	RPS Instrumentation - Shutdown (Digital)	NUREG(s)- 1432 Only
Action 3.3.5	ESFAS Instrumentation (Digital) Change Description: Actions Note	NUREG(s)- 1432 Only
Action 3.3.5 Bases	ESFAS Instrumentation (Digital)	NUREG(s)- 1432 Only
Action 3.3.7	DG - LOVS (Digital) Change Description: Actions Note	NUREG(s)- 1432 Only
Action 3.3.7 Bases	DG - LOVS (Digital)	NUREG(s)- 1432 Only
5.5.1	ODCM	NUREG(s)- 1433 1434 Only

CEOG Review Information

CEOG-30

Originating Plant: Palo Verde Date Provided to OG: 14-Mar-96 Needed By: 01-Sep-96

Owners Group History:

Owners Group Resolution: Approved Date: 14-Mar-96

TSTF Review Information

TSTF Received Date: 12-Apr-96 Date Distributed to OGs for Review 12-Apr-96

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

TSTF History:

NA WOG, BWOG, BWRs

TSTF Resolution: Approved Date: 14-May-96 **TSTF- 76**

NRC Review Information

NRC Received Date: 17-Jul-96 NRC Reviewer: C. Schulten Reviewer Phone #:

Reviewer Comments:

9/18/96 - Review pending.
10/31/96 - Reviewer recommends revising Note to refer to the onsite review committee.
3/18/97 - C. Grimes to consider deleting the Note entirely.
3/10/97 - Note: A review of all of the ISTS NUREGs by Excel Services revealed that the only references to the onsite review committee not relocated by this change are found in the BWR/4 and BWR/6 NUREGs, in Admin Controls 5.5.1, ODCM, regarding approval of changes. The same requirements in the PWR NUREGs do not contain the reference to the onsite review committee.
4/17/97 - TSTF agreed to modifiy to eliminate all references to the onsite review committee.

Final Resolution: NRC Action Pending Final Resolution Date:

Revision History

TSTF Revision 1 Revision Date: 02-Sep-97 Proposed by: TSTF

Revision Description:
Added correction of BWR/4 and BWR/6 pages to eliminate all references to the onsite review function.

Distributed to TSTF: Resolution: Date: Rev to NRC:

Incorporation Into the NUREGs

File to BBS/LAN Date:

File to TSTF Date:

File Rev Incoporated:

File Rev Incorporated Date

TSTF-76, Rev. 1

3.3 INSTRUMENTATION

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

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

APPLICABILITY: According to Table 3.3.1-1.

ACTIONS

--

----------NOTES----------

~~1.~~ Separate Condition entry is allowed for each RPS Function.

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more Functions with one automatic RPS trip channel inoperable.	A.1	Place channel in bypass or trip.	1 hour
	AND		
	A.2	Restore channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry
B. One or more Functions with two automatic RPS trip channels inoperable.	B.1	--------NOTE-------- LCO 3.0.4 is not applicable. ---------- Place one channel in bypass and the other in trip.	1 hour

(continued)

TSTF-76, Rev. 1

3.3 INSTRUMENTATION

3.3.2 Reactor Protective System (RPS) Instrumentation—Shutdown (Digital)

LCO 3.3.2 Four RPS Logarithmic Power Level—High trip channels and associated instrument and bypass removal channels shall be OPERABLE. Trip channels shall have an Allowable Value of ≤ [.93]% RTP.

APPLICABILITY: MODES 3, 4, and 5, with any reactor trip circuit breakers (RTCBs) closed and any control element assembly capable of being withdrawn.

---NOTE---
Trip may be bypassed when THERMAL POWER is > [1E-4]% RTP. Bypass shall be automatically removed when THERMAL POWER is ≤ [1E-4]% RTP.

ACTIONS

---NOTE---
If a channel is placed in bypass, continued operation with the channel in the bypassed condition for the Completion Time specified by Required Action A.2 or C.2.2 shall be reviewed in accordance with Specification 5.5.1.2.e.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One RPS logarithmic power level trip channel inoperable.	A.1	Place channel in bypass or trip.	1 hour
	AND		
	A.2	Restore channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry

(continued)

TSTF-76, Rev. 1

3.3 INSTRUMENTATION

3.3.5 Engineered Safety Features Actuation System (ESFAS) Instrumentation (Digital)

LCO 3.3.5 Four ESFAS trip and bypass removal channels for each Function in Table 3.3.5-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5-1.

ACTIONS

--

----------NOTES----------

~~1.~~ Separate Condition entry is allowed for each ESFAS Function.

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more Functions with one automatic ESFAS trip channel inoperable.	A.1	Place channel in bypass or trip.	1 hour
	AND		
	A.2	Restore channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry

(continued)

TSTF-76, Rev. 1

3.3 INSTRUMENTATION

3.3.7 Diesel Generator (DG)—Loss of Voltage Start (LOVS) (Digital)

LCO 3.3.7 [Four] channels of Loss of Voltage Function and [four] channels of Degraded Voltage Function auto-initiation instrumentation per DG shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.
When associated DG is required to be OPERABLE by LCO 3.8.2, "AC Sources—Shutdown."

ACTIONS

----------NOTES----------

~~1.~~ Separate Condition entry is allowed for each Function.

~~2. If a channel is placed in bypass, continued operation with the channel in the bypassed condition for the Completion Time specified by Required Action A.2 shall be reviewed in accordance with Specification 5.5.1.2.e.~~

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more Functions with one channel per DG inoperable.	A.1	Place channel in bypass or trip.	1 hour
	AND		
	A.2	Restore channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry

(continued)

-TSTF-76, Rev. 1

BASES

ACTIONS (continued)

less conservative than the Allowable Value stated in the LCO, the channel is declared inoperable immediately, and the appropriate Condition(s) must be entered immediately.

In the event a channel's trip setpoint is found nonconservative with respect to the Allowable Value, or the excore logarithmic power channel or RPS bistable trip unit is found inoperable, then all affected Functions provided by that channel must be declared inoperable and the unit must enter the Condition for the particular protection Function affected.

When the number of inoperable channels in a trip Function exceeds that specified in any related Condition associated with the same trip Function, then the plant is outside the safety analysis. Therefore, LCO 3.0.3 is immediately entered, if applicable in the current MODE of operation.

A Note was added to ensure review by the onsite review committee (per Specification 5.5.1.2.e) is performed to discuss the desirability of maintaining the channel in the bypassed condition.

A.1, and A.2

Condition A applies to the failure of a single Logarithmic Power Level—High trip channel or associated instrument channel.

The Logarithmic Power Level—High coincidence logic is two-out-of-four. If one channel is inoperable, operation in MODES 3, 4, and 5 is allowed to continue, providing the inoperable channel is placed in bypass or trip in 1 hour (Required Action A.1).

The 1 hour allotted to bypass or trip the channel is sufficient to allow the operator to take all appropriate actions for the failed channel while ensuring that the risk involved in operating with the failed channel is acceptable.

The failed channel must be restored to OPERABLE status prior to entering MODE 2 following the next MODE 5 entry. With a channel bypassed, the coincidence logic is now in a two-out-of-three configuration. The Completion Time is based on adequate channel to channel independence, which

(continued)

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BASES

ACTIONS (continued)

with the same trip Function, then the plant is outside the safety analysis. Therefore, LCO 3.0.3 is immediately entered if applicable in the current MODE of operation.

~~Two~~ A Notes ~~have~~ has been added to the ACTIONS. ~~Note~~ The 1 has been added to clarify the application of the Completion Time rules. The Conditions of this Specification may be entered independently for each Function. The Completion Times of each inoperable Function will be tracked separately for each Function, starting from the time the Condition was entered for that Function. Note 2 was added to ensure review by the onsite review committee (per Specification 5.5.1.2.e) is performed to discuss the desirability of maintaining the channel in the bypassed condition.

A.1 and A.2

Condition A applies to the failure of a single trip channel or associated instrument channel inoperable in any RPS automatic trip Function. RPS coincidence logic is two-out-of-four.

If one RPS channel is inoperable, startup or power operation is allowed to continue, providing the inoperable channel is placed in bypass or trip in 1 hour (Required Action A.1). The 1 hour allotted to bypass or trip the channel is sufficient to allow the operator to take all appropriate actions for the failed channel and still ensures that the risk involved in operating with the failed channel is acceptable. The failed channel must be restored to OPERABLE status prior to entering MODE 2 following the next MODE 5 entry. With a channel in bypass, the coincidence logic is now in a two-out-of-three configuration.

The Completion Time of prior to entering MODE 2 following the next MODE 5 entry is based on adequate channel to channel independence, which allows a two-out-of-three channel operation since no single failure will cause or prevent a reactor trip.

B.1

Condition B applies to the failure of two channels in any RPS automatic trip Function.

(continued)

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BASES (continued)

ACTIONS

The most common causes of channel inoperability are outright failure or drift of the bistable or process module sufficient to exceed the tolerance allowed by the plant specific setpoint analysis. Typically, the drift is found to be small and results in a delay of actuation rather than a total loss of function. Determination of setpoint drift is generally made during the performance of a CHANNEL FUNCTIONAL TEST when the process instrument is set up for adjustment to bring it to within specification.

In the event a channel's trip setpoint is found nonconservative with respect to the Allowable Value, or the transmitter, instrument loop, signal processing electronics, or ESFAS bistable is found inoperable, then all affected Functions provided by that channel must be declared inoperable and the LCO Condition entered for the particular protection Function affected.

When the number of inoperable channels in a trip Function exceeds those specified in any related Condition associated with the same trip Function, then the plant is outside the safety analysis. Therefore, LCO 3.0.3 should be entered immediately, if applicable in the current MODE of operation.

A ~~Two~~ Notes ~~have~~ has been added to the ACTIONS. The ~~1~~ has been added to clarify the application of the Completion Time rules. The Conditions of this Specification may be entered independently for each Function. The Completion Time for the inoperable channel of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function. Note 2 was added to ensure review by the onsite review committee (per Specification 5.5.1.2.e) is performed to discuss the desirability of maintaining the channel in the bypassed condition.

A.1 and A.2

Condition A applies to the failure of a single channel of one or more input parameters in the following ESFAS Functions:

1. Safety Injection Actuation Signal
   Containment Pressure—High
   Pressurizer Pressure—Low

(continued)

ACTIONS (continued)

When the number of inoperable channels in a trip Function exceeds those specified in any related Condition associated with the same trip Function, then the plant is outside the safety analysis. Therefore, LCO 3.0.3 should be entered immediately if applicable in the current MODE of operation.

Two Notes have been added to the ACTIONS. Note 1 has been added to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each DG—LOVS Function. The Completion Time(s) of the inoperable channel(s) of a Function will be tracked separately for each Function, starting from the time the Condition was entered for that Function. Note 2 was added to ensure review by the onsite review committee (per Specification 5.5.1.2.e) is performed to discuss the desirability of maintaining the channel in the bypassed condition.

A.1 and A.2

Condition A applies if one channel is inoperable for one or more Functions per DG bus.

If the channel cannot be restored to OPERABLE status, the affected channel should either be bypassed or tripped within 1 hour (Required Action A.1).

Placing this channel in either Condition ensures that logic is in a known configuration. In trip, the LOVS Logic is one-out-of-three. In bypass, the LOVS Logic is two-out-of-three, and interlocks prevent bypass of a second channel for the affected Function. The 1 hour Completion Time is sufficient to perform these Required Actions.

Once Required Action A.1 has been complied with, Required Action A.2 allows prior to entering MODE 2 following the next MODE 5 entry to repair the inoperable channel. If the channel cannot be restored to OPERABLE status, the plant cannot enter MODE 2 following the next MODE 5 entry. The time allowed to repair or trip the channel is reasonable to repair the affected channel while ensuring that the risk involved in operating with the inoperable channel is acceptable. The prior to entering MODE 2 following the next MODE 5 entry Completion Time is based on adequate channel independence, which allows a two-out-of-three channel

(continued)

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5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented and maintained.

5.5.1 Offsite Dose Calculation Manual (ODCM)

a. The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and

b. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release, reports required by Specification [5.6.2] and Specification [5.6.3].

Licensee initiated changes to the ODCM:

a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:

1. sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and

2. a determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;

b. Shall become effective after ~~review and acceptance by the [onsite review function]~~ and the approval of the [Plant Superintendent]; and

c. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page

(continued)

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5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented, and maintained.

5.5.1 Offsite Dose Calculation Manual (ODCM)

a. The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and

b. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release Reports required by Specification [5.6.2] and Specification [5.6.3].

Licensee initiated changes to the ODCM:

a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:

1. sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and

2. a determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;

b. Shall become effective after ~~review and acceptance by the [onsite review function]~~ and the approval of the [Plant Superintendent]; and

c. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of, or concurrent with, the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made.

(continued)

Industry/TSTF Standard Technical Specification Change Traveler

Revise DG full load rejection test

Classification: 1) Correct Specifications

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

Description:

The stipulation in SRs 3.8.1.9, 3.8.1.10, and 3.8.1.14 that the full load rejection test be performed at a specified power factor is consistently presented as a Note associated with the SR with clarifications addressing situations when the power factor cannot be achieved.

Justification:

When the DG is not paralleled to the grid, the power factor is determined by plant load and cannot be adjusted. Therefore, power factor requirements are applicable only when the test is performed with the DG paralleled to the grid. This change provides additional detail and is intended to improve clarity and ensure requirements are fully understood and consistently applied.

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NRC Contact:	Tomlinson, Ed	301-314-3137	ebt@nrc.gov

Revision History

OG Revision 0 Revision Status: Closed

Revision Proposed by: Susquehanna

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 22-Nov-96

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 22-Nov-96

TSTF Review Information

TSTF Received Date: 02-Dec-96 Date Distributed for Review

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

TSTF Comments:

Superceded by Rev. 1

TSTF Resolution: Superceeded Date: 16-May-97

OG Revision 1 Revision Status: Closed

Revision Proposed by: BWROG

Revision Description:
Added BWR/6 markup and made SR Note order consistent.

OG Revision 1 Revision Status: Closed

Applicable to all ISTS NUREGs.

Owners Group Review Information

Date Originated by OG: 27-Apr-97

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 04-Aug-97

TSTF Review Information

TSTF Received Date: 16-May-97 Date Distributed for Review 15-Jan-98

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

TSTF Comments:
Originally distributed on 5/16/97.

WOG - Applicable, OK
CEOG - Applicable, OK
BWOG - Applicable, OK
Change the SR 3.8.1.10 in BWR/6 to be consistent with BWR/4.

TSTF Resolution: Approved Date: 05-Feb-98

NRC Review Information

NRC Received Date: 29-May-98

NRC Comments:

7/16/98 - The staff has reviewed the proposed change and finds that it does not appear to be necessary. The SR in question is the full load reject test. It is the staff's view that full load on a DG can only be obtained while parallel with offsite power grid; i.e.., there is not enough load on the safety bus to fully load the DG. When paralleled with offsite power, the power factor can be controlled and the SR is correctly worded in its present form.

The staff can re-review the proposed change if the OGs can provide an example of a plant that can fully load a DG using only loads on the safety buss when disconnected from offsite power network.
9/23/98 - TSTF still considering
6/16/99 - Ed T (NRC) stated that for those circumstances where the grid precluded reaching the appropriate power factor, the change could be approved on a plant-specific basis. Ed suggests a Note in the SR stating this flexibility. For example, "NOTE If the grid conditions are such that the power factor cannot be met without creating excessive voltages, the power factor may be adjusted to meet the best power factor available without exceeding the voltage to safely perform the SR."

Final Resolution: Superceded by Revision Final Resolution Date: 21-Apr-99

TSTF Revision 1 Revision Status: Closed

Revision Proposed by: TSTF

Revision Description:
Revised proposed Note 2 to include consideration for situations when the desired power factor cannot be

TSTF Revision 1 — Revision Status: Closed

achieved. Expanded change to SR 3.8.1.9 and SR 3.8.1.14 to address all SRs which require a specific power factor consistently.

TSTF Review Information

TSTF Received Date: 17-Jul-99 Date Distributed for Review 17-Jul-99

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

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 17-Jul-99

NRC Review Information

NRC Received Date: 20-Jul-99

NRC Comments:

8/16/99 - NRC Comments: The proposed changes are essentially acceptable. However, the proposed Bases should be expanded to more closely reflect the SR NOTES that will be included as part of this change. As proposed, the Bases do not address the exception to meeting the power factor requirements or why it is acceptable. The following is a suggested change to the proposed Bases.

Note 2 (Insert 3) Note 3 (Insert 4) ensures that the DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of =< [0.9]. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 2 (Insert 3) Note 3 (Insert 4) allows the surveillance to be conducted at a power factor other than =< [0.9]. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to =< [0.9] results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to [0.9] while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of [0.9] may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained as close as practicable to [0.9] without exceeding the DG excitation limits.

Final Resolution: Superceded by Revision Final Resolution Date: 16-Aug-99

TSTF Revision 2 — Revision Status: Active — Next Action: NRC

Revision Proposed by: NRC

Revision Description:
The proposed Bases are expanded to more closely reflect the SR Notes that are included in the change.

TSTF Review Information

TSTF Received Date: 30-Aug-99 Date Distributed for Review 30-Aug-99

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

TSTF Comments:

(No Comments)

TSTF Revision 2 **Revision Status: Active** **Next Action: NRC**

TSTF Resolution: Approved Date: 30-Aug-99

NRC Review Information

NRC Received Date: 31-Aug-99

NRC Comments:

(No Comments)

Final Resolution: NRC Action Pending Final Resolution Date:

Incorporation Into the NUREGs

File to BBS/LAN Date: TSTF Informed Date: TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

SR 3.8.1.9	AC Sources - Operating
SR 3.8.1.9 Bases	AC Sources - Operating
SR 3.8.1.10	AC Sources - Operating
SR 3.8.1.10 Bases	AC Sources - Operating
SR 3.8.1.14	AC Sources - Operating
SR 3.8.1.14 Bases	AC Sources - Operating

INSERT 1

2. If performed with DG synchronized with offsite power, it shall be performed at a power factor $\leq$ [0.9]. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.

INSERT 2

3. If performed with DG synchronized with offsite power, it shall be performed at a power factor $\leq$ [0.9]. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.

INSERT 3

Note 2 ensures that the DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of $\leq$ [0.9]. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 2 allows the surveillance to be conducted at a power factor other than $\leq$ [0.9]. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to $\leq$ [0.9] results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to [0.9] while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of [0.9] may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained as close as practicable to [0.9] without exceeding the DG excitation limits.

INSERT 4

Note 3 ensures that the DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of $\leq$ [0.9]. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 3 allows the surveillance to be conducted at a power factor other than $\leq$ [0.9]. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to $\leq$ [0.9] results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to [0.9] while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of [0.9] may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained as close as practicable to [0.9] without exceeding the DG excitation limits.

INSERT 5

2. If performed with DG synchronized with offsite power, it shall be performed at a power factor $\leq$ [0.9] for Division 1 and 2 DGs, and $\leq$ [0.9].for Division 3 DG. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.9 ----------NOTES---------- 1. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. ---------- Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ [63] Hz; b. Within [3] seconds following load rejection, the voltage is ≥ [3740] V and ≤ [4580] V; and c. Within [3] seconds following load rejection, the frequency is ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]
SR 3.8.1.10 ----------NOTE---------- This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG operating at a power factor ≤ [0.9] does not trip, and voltage is maintained ≤ [5000] V during and following a load rejection of ≥ [4500] kW and ≤ [5000] kW.	[18 months]

Insert 1

Insert 1

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.14 ----------NOTES---------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- (Insert 2) → Verify each DG ~~operating at a power factor~~ ≤ [0.9] operates for ≥ 24 hours: a. For ≥ [2] hours loaded ≥ [5250] kW and ≤ [6000] kW; and b. For the remaining hours of the test loaded ≥ [4500] kW and ≤ [5000] kW.	[18 months]
SR 3.8.1.15 ----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ [2] hours loaded ≥ [4500] kW and ≤ [5000] kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts and achieves, in ≤ [10] seconds, voltage ≥ [3740] V and ≤ [4580] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

This SR is modified by a Note. The reason for the Note is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Credit may be taken for unplanned events that satisfy this SR. In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, Note 2 requires that, if synchronized to offsite power, testing must be performed using a power factor ≤ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience.

Insert 3

Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

SR 3.8.1.10

This Surveillance demonstrates the DG capability to reject a full load without overspeed tripping or exceeding the predetermined voltage limits. The DG full load rejection may occur because of a system fault or inadvertent breaker tripping. This Surveillance ensures proper engine generator load response under the simulated test conditions. This test simulates the loss of the total connected load that the DG experiences following a full load rejection and verifies that the DG will not trip upon loss of the load. These

(continued)

SURVEILLANCE REQUIREMENTS

SR 3.8.1.10 (continued)

acceptance criteria provide DG damage protection. While the DG is not expected to experience this transient during an event and continues to be available, this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated.

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, testing must be performed using a power factor ≤ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience.

The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9) and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by two Notes. The reason for the Note is that during operation with the reactor critical, performance of this SR could cause perturbation to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems.

Insert 3

Credit may be taken for unplanned events that satisfy this SR.

Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.14 (continued)

In order to ensure that the DG is tested under load conditions that are as close to design conditions as possible, testing must be performed using a power factor of ≤ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience. The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections, in accordance with vendor recommendations, in order to maintain DG OPERABILITY.

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 7), paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with expected fuel cycle lengths.

three

This Surveillance is modified by two Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the power factor limit will not invalidate the test. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Credit may be taken for unplanned events that satisfy this SR.

Insert 4

SR 3.8.1.15

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within [10 seconds]. The [10 second] time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5).

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.9 ----------NOTES---------- 1. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. ---------- Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ [63] Hz; b. Within [3] seconds following load rejection, the voltage is ≥ [3740] V and ≤ [4580] V; and c. Within [3] seconds following load rejection, the frequency is ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]
SR 3.8.1.10 ----------NOTE---------- This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG operating at a power factor ≤ [0.9] does not trip and voltage is maintained ≤ [5000] V during and following a load rejection of ≥ [4500] kW and ≤ [5000] kW.	[18 months]

Insert 1

Insert 1

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.14 ----------NOTES---------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG ~~operating at a power factor~~ ≤ [0.9] operates for ≥ 24 hours: a. For ≥ [2] hours loaded ≥ [5250] kW and ≤ [5500] kW; and b. For the remaining hours of the test loaded ≥ [4500] kW and ≤ [5000] kW.	[18 months]
SR 3.8.1.15 ----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ [2] hours loaded ≥ [4500] kW and ≤ [5000] kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts and achieves, in ≤ [10] seconds, voltage ≥ [3740] V, and ≤ [4580] V and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]

Insert 2

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

overspeed, which, if excessive, might result in a trip of the engine. This Surveillance demonstrates the DG load response characteristics and capability to reject the largest single load without exceeding predetermined voltage and frequency and while maintaining a specified margin to the overspeed trip. [For this unit, the single load for each DG and its horsepower rating is as follows:] This Surveillance may be accomplished by:

a. Tripping the DG output breaker with the DG carrying greater than or equal to its associated single largest post-accident load while paralleled to offsite power, or while solely supplying the bus; or

b. Tripping its associated single largest post-accident load with the DG solely supplying the bus.

As required by IEEE-308 (Ref. 12), the load rejection test is acceptable if the increase in diesel speed does not exceed 75% of the difference between synchronous speed and the overspeed trip setpoint, or 15% above synchronous speed, whichever is lower.

The time, voltage, and frequency tolerances specified in this SR are derived from Regulatory Guide 1.9 (Ref. 3) recommendations for response during load sequence intervals. The 3 seconds specified is equal to 60% of a typical 5 second load sequence interval associated with sequencing of the largest load. The voltage and frequency specified are consistent with the design range of the equipment powered by the DG. SR 3.8.1.9.a corresponds to the maximum frequency excursion, while SR 3.8.1.9.b and SR 3.8.1.9.c are steady state voltage and frequency values to which the system must recover following load rejection. The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9).

This SR is modified by two Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Credit may be taken for unplanned events that satisfy this SR. ~~In order to ensure that the DG is tested under~~ load

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

Insert 3

conditions that are as close to design basis conditions as possible. Note 2 requires that, if synchronized to offsite power, testing must be performed using a power factor ≤ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience.

Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

SR 3.8.1.10

This Surveillance demonstrates the DG capability to reject a full load without overspeed tripping or exceeding the predetermined voltage limits. The DG full load rejection may occur because of a system fault or inadvertent breaker tripping. This Surveillance ensures proper engine generator load response under the simulated test conditions. This test simulates the loss of the total connected load that the DG experiences following a full load rejection and verifies that the DG does not trip upon loss of the load. These acceptance criteria provide for DG damage protection. While the DG is not expected to experience this transient during an event and continues to be available, this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated.

(continued)

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SURVEILLANCE REQUIREMENTS

SR 3.8.1.10 (continued)

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, testing must be performed using a power factor ≤ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience.

The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9) and is intended to be consistent with expected fuel cycle lengths.

This SR has been modified by a Note. The reason for the Note is that during operation with the reactor critical, performance of this SR could cause perturbation to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Credit may be taken for unplanned events that satisfy this SR.

Insert 3

[Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.]

SR 3.8.1.11

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(1), this Surveillance demonstrates the as designed operation of the standby power sources during loss of the offsite source. This test verifies all actions

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.13 (continued)

Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

SR 3.8.1.14

Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), requires demonstration once per 18 months that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours, ≥ [2] hours of which is at a load equivalent to 110% of the continuous duty rating and the remainder of the time at a load equivalent to the continuous duty rating of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelubricating and warmup, discussed in SR 3.8.1.2, and for gradual loading, discussed in SR 3.8.1.3, are applicable to this SR.

In order to ensure that the DG is tested under load conditions that are as close to design conditions as possible, testing must be performed using a power factor of ≤ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience. The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.14 (continued)

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This Surveillance is modified by three Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the power factor limit will not invalidate the test. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Credit may be taken for unplanned events that satisfy this SR.

Insert 4

SR 3.8.1.15

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within [10] seconds. The [10] second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5).

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The requirement that the diesel has operated for at least [2] hours at full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot conditions. Momentary transients due to changing bus loads do not invalidate this test. Note 2 allows all DG starts to be preceded by an engine prelube period to minimize wear and tear on the diesel during testing.

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.9 ----------NOTES---------- 1. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. ---------- Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ [63] Hz; b. Within [3] seconds following load rejection, the voltage is ≥ [3740] V and ≤ [4580] V; and c. Within [3] seconds following load rejection, the frequency is ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]
SR 3.8.1.10 ----------NOTE---------- This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG operating at a power factor ≤ [0.9], does not trip, and voltage is maintained ≤ [5000] V during and following a load rejection of ≥ [4500] kW and ≤ [5000] kW.	[18 months]

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.14 ----------NOTES---------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG, ~~operating at a power factor ≤ [0.9],~~ operates for ≥ 24 hours: a. For ≥ [2] hours loaded ≥ [5250] kW and ≤ [5500] kW; and b. For the remaining hours of the test loaded ≥ [4500] kW and ≤ [5000] kW.	[18 months]
SR 3.8.1.15 ----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ [2] hours loaded ≥ [4500] kW and ≤ [5000] kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts and achieves, in ≤ [10] seconds, voltage ≥ [3740] V and ≤ [4580] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]

Insert 2

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

and frequency and while maintaining a specified margin to the overspeed trip. [For this unit, the single load for each DG and its horsepower rating is as follows:] This Surveillance may be accomplished by:

a. Tripping the DG output breaker with the DG carrying greater than or equal to its associated single largest post-accident load while paralleled to offsite power or while solely supplying the bus; or

b. Tripping its associated single largest post-accident load with the DG solely supplying the bus.

As required by IEEE-308 (Ref. 13), the load rejection test is acceptable if the increase in diesel speed does not exceed 75% of the difference between synchronous speed and the overspeed trip setpoint, or 15% above synchronous speed, whichever is lower.

The time, voltage, and frequency tolerances specified in this SR are derived from Regulatory Guide 1.9 (Ref. 3) recommendations for response during load sequence intervals. The [3] seconds specified is equal to 60% of a typical 5 second load sequence interval associated with sequencing of the largest load. The voltage and frequency specified are consistent with the design range of the equipment powered by the DG. SR 3.8.1.9.a corresponds to the maximum frequency excursion, while SR 3.8.1.9.b and SR 3.8.1.9.c are steady state voltage and frequency values to which the system must recover following load rejection. The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9).

This SR is modified by two Notes. The reason for the 1 Note is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Credit may be taken for unplanned events that satisfy this SR. In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, Note 2 requires that, if synchronized to offsite power, testing must be performed using a power factor ≤ [0.9]. This power factor is chosen to be representative

Insert 3

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

of the actual design basis inductive loading that the DG would experience.

Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

SR 3.8.1.10

This Surveillance demonstrates the DG capability to reject a full load without overspeed tripping or exceeding the predetermined voltage limits. The DG full load rejection may occur because of a system fault or inadvertent breaker tripping. This Surveillance ensures proper engine generator load response under the simulated test conditions. This test simulates the loss of the total connected load that the DG experiences following a full load rejection and verifies that the DG will not trip upon loss of the load. These acceptance criteria provide DG damage protection. While the DG is not expected to experience this transient during an event and continues to be available, this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated.

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, testing must be performed using a power factor $\leq$ [0.9]. This power factor is chosen to be representative

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.10 (continued)

of the actual design basis inductive loading that the DG would experience.

The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9) and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is that during operation with the reactor critical, performance of this SR could cause perturbation to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Credit may be taken for unplanned events that satisfy this SR.

Insert 3

Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

SR 3.8.1.11

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(1), this Surveillance demonstrates the as designed operation of the standby power sources during loss of the offsite source. This test verifies all actions encountered from the loss of offsite power, including shedding of the nonessential loads and energization of the emergency buses and respective loads from the DG. It further demonstrates the capability of the DG to

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.13 (continued)

Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

SR 3.8.1.14

Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), requires demonstration once per 18 months that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours, ≥ [2] hours of which is at a load equivalent to 110% of the continuous duty rating and the remainder of the time at a load equivalent to the continuous duty rating of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelubricating and warmup, discussed in SR 3.8.1.2, and for gradual loading, discussed in SR 3.8.1.3, are applicable to this SR.

In order to ensure that the DG is tested under load conditions that are as close to design conditions as possible, testing must be performed using a power factor of ≤ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience. The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.14 (continued)

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 7), paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. three

This Surveillance is modified by ~~two~~ Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the power factor limit will not invalidate the test. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Credit may be taken for unplanned events that satisfy this SR.

Insert 4

SR 3.8.1.15

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within [10] seconds. The [10] second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5).

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The requirement that the diesel has operated for at least [2] hours at full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot conditions. Momentary transients due to changing bus loads do not invalidate this test. Note 2 allows all DG starts to be preceded by an engine prelube period to minimize wear and tear on the diesel during testing.

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.9 ----------NOTES---------- 1. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. ---------- Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ [65.5] Hz; b. Within [3] seconds following load rejection, the voltage is ≥ [3740] V and ≤ [4580] V; and c. Within [6] seconds following load rejection, the frequency is ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]
SR 3.8.1.10 ----------NOTE---------- This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG operating at a power factor ≤ [0.9] does not trip and voltage is maintained ≤ [4800] V during and following a load rejection of ≥ [1710] kW and ≤ [2000] kW.	[18 months]

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.14 ----------NOTES---------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG ~~operating at a power factor~~ ≤ ~~[0.9]~~ operates for ≥ 24 hours: a. For ≥ [2] hours loaded ≥ [3100] kW and ≤ [3400] kW; and b. For the remaining hours of the test loaded ≥ [2850] kW and ≤ [3150] kW.	[18 months]
SR 3.8.1.15 ----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ [2] hours loaded ≥ [1710] kW and ≤ [2000] kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts and achieves, in ≤ [12] seconds, voltage ≥ [3740] V and ≤ [4584] V and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]

Insert 2

(continued)

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SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

a. Tripping the DG output breaker with the DG carrying greater than or equal to its associated single largest post-accident load while paralleled to offsite power, or while solely supplying the bus; or

b. Tripping its associated single largest post-accident load with the DG solely supplying the bus.

As required by IEEE-308 (Ref. 14), the load rejection test is acceptable if the increase in diesel speed does not exceed 75% of the difference between synchronous speed and the overspeed trip setpoint, or 15% above synchronous speed, whichever is lower. For DGs 2A, 2C, and 1B, this represents 65.5 Hz, equivalent to 75% of the difference between nominal speed and the overspeed trip setpoint.

The time, voltage, and frequency tolerances specified in this SR are derived from Regulatory Guide 1.9 (Ref. 3) recommendations for response during load sequence intervals. The [6] seconds specified is equal to 60% of the 10 second load sequence interval associated with sequencing the residual heat removal (RHR) pumps during an undervoltage on the bus concurrent with a LOCA. The voltage and frequency specified are consistent with the design range of the equipment powered by the DG. SR 3.8.1.9.a corresponds to the maximum frequency excursion, while SR 3.8.1.9.b and SR 3.8.1.9.c are steady state voltage and frequency values to which the system must recover following load rejection. The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9).

This SR is modified by two Notes. The reason for Note 1 is that, during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, plant safety systems. Credit may be taken for unplanned events that satisfy this SR.

Insert 3 →

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, Note 2 requires that, if synchronized to offsite power, testing must be performed using a power factor ≤ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience.

(continued)

BASES

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SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

SR 3.8.1.10

This Surveillance demonstrates the DG capability to reject a full load without overspeed tripping or exceeding the predetermined voltage limits. The DG full load rejection may occur because of a system fault or inadvertent breaker tripping. This Surveillance ensures proper engine generator load response under the simulated test conditions. This test simulates the loss of the total connected load that the DG experiences following a full load rejection and verifies that the DG does not trip upon loss of the load. These acceptance criteria provide DG damage protection. While the DG is not expected to experience this transient during an event, and continues to be available, this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated.

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, testing must be performed using a power factor ≤ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience.

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.10 (continued)

The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9) and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by two Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that would challenge continued steady state operation and, as a result, plant safety systems. Credit may be taken for unplanned events that satisfy this SR.

Insert 3

Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

SR 3.8.1.11

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(1), this Surveillance demonstrates the as designed operation of the standby power sources during loss of the offsite source. This test verifies all actions encountered from the loss of offsite power, including shedding of the nonessential loads and energization of the emergency buses and respective loads from the DG. It further demonstrates the capability of the DG to automatically achieve the required voltage and frequency within the specified time.

The DG auto-start time of 12 seconds is derived from requirements of the accident analysis for responding to a

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.13 (continued)

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

SR 3.8.1.14

Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), requires demonstration once per [18 months] that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours—22 hours of which is at a load equivalent to the continuous rating of the DG, and 2 hours of which is at a load equivalent to 110% of the continuous duty rating of the DG. Plant Hatch has taken an exception to this requirement and performs the 2 hour run at the 2000 hour rating (3100 kW). The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelube and warmup, discussed in SR 3.8.1.2, and for gradual loading, discussed in SR 3.8.1.3, are applicable to this SR.

In order to ensure that the DG is tested under load conditions that are as close to design conditions as possible, testing must be performed using a power factor $\leq$ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG could experience. A load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3); takes into consideration plant conditions required to perform the Surveillance; and is intended to be consistent with expected fuel cycle lengths.

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.14 (continued)

This Surveillance has been modified by ~~two~~ three Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the limit do not invalidate the test. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that would challenge continued steady state operation and, as a result, plant safety systems. Credit may be taken for unplanned events that satisfy this SR.

Insert 4

SR 3.8.1.15

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within [12] seconds. The [12] second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5).

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The requirement that the diesel has operated for at least 2 hours at full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot conditions. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. Momentary transients due to changing bus loads do not invalidate this test. Note 2 allows all DG starts to be preceded by an engine prelube period to minimize wear and tear on the diesel during testing.

SR 3.8.1.16

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(6), this Surveillance ensures that the manual synchronization and automatic load transfer from the DG to the offsite source can be made and that the DG can be returned

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.9 **----------NOTES----------** 1. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. 2. ~~If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9].~~ **----------** Verify each DG rejects a load greater than or equal to its associated single largest post-accident load for [Division 1 and ≥ [550] kW for Division 2] DGs and ≥ [2180] kW for [Division 3] DG, and: a. Following load rejection, the frequency is ≤ [69] Hz; b. Within [3] seconds following load rejection, the voltage is ≥ [3744] V and ≤ [4576] V; and c. Within [3] seconds following load rejection, the frequency is ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]

Insert 1

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.10 NOTE This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. Verify each DG ~~operating at a power factor~~ ≤ [0.9] does not trip and voltage is maintained ≤ [5000] V during and following a load rejection of a load ≥ [5450] kW and ≤ [5740] kW for [Division 1 and 2] DGs and ≥ [3300] kW and ≤ [3500] kW for [Division 3] DG.	[18 months]

Insert 1

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.14 ----------NOTES---------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG ~~operating at a power factor~~ $\leq$ [0.9] ~~for~~ Division 1 and 2 DGs, and $\leq$ [0.9] ~~for~~ Division 3 DG, operates for $\geq$ 24 hours: a. For $\geq$ [2] hours loaded, $\geq$ [5450] kW and $\leq$ [5740] kW for Division 1 and 2 DGs, $\geq$ [3630] kW and $\leq$ [3830] kW for Division 3 DG; and b. For the remaining hours of the test loaded $\geq$ [3744] kW and $\leq$ [4576] kW for Division 1 and 2 DGs, and $\geq$ [3300] kW and $\leq$ [3500] kW for Division 3 DG.	[18 months]

Insert 5 →

(continued)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

sequence interval associated with sequencing of this largest load. The voltage and frequency specified are consistent with the design range of the equipment powered by the DG. SR 3.8.1.9.a corresponds to the maximum frequency excursion, while SR 3.8.1.9.b and SR 3.8.1.9.c are steady state voltage and frequency values to which the system must recover following load rejection. The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9).

This SR has been modified by two Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, plant safety systems. Credit may be taken for unplanned events that satisfy this SR. In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, Note 2 requires that, if synchronized to offsite power, testing must be performed using a power factor ≤ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG could experience.

Insert 3

Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

(continued)

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BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.10

This Surveillance demonstrates the DG capability to reject a full load without overspeed tripping or exceeding the predetermined voltage limits. The DG full load rejection may occur because of a system fault or inadvertent breaker tripping. This Surveillance ensures proper engine generator load response under the simulated test conditions. This test simulates the loss of the total connected load that the DG experiences following a full load rejection and verifies that the DG does not trip upon loss of the load. These acceptance criteria provide DG damage protection. While the DG is not expected to experience this transient during an event, and continues to be available, this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated.

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, testing must be performed using a power factor $\leq$ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience.

The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9) and is intended to be consistent with expected fuel cycle lengths.

This SR has been modified by a Note. The reason for the Note is that during operation with the reactor critical, performance of this SR could cause perturbation to the electrical distribution systems that could challenge continued steady state operation and, as a result, plant safety systems. Credit may be taken for unplanned events that satisfy this SR.

Insert 3

Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

(continued)

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BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.14

Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), requires demonstration once per 18 months that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours—22 hours of which is at a load equivalent to the continuous rating of the DG, and 2 hours of which is at a load equivalent to 110% of the continuous duty rating of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelube and warmup, discussed in SR 3.8.1.2, and for gradual loading, discussed in SR 3.8.1.3, are applicable to this SR.

In order to ensure that the DG is tested under load conditions that are as close to design conditions as possible, testing must be performed using a power factor $\leq$ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG could experience.

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3); takes into consideration plant conditions required to perform the Surveillance; and is intended to be consistent with expected fuel cycle lengths.

This Surveillance is modified by three Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. Similarly, momentary power factor transients above the limit do not invalidate the test. The reason for Note 2 is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that would challenge continued steady state operation and, as a result, plant safety systems. Credit may be taken for unplanned events that satisfy this SR.

Insert 4

(continued)

Industry/TSTF Standard Technical Specification Change Traveler

Allow standby SDC/RHR/DHR loop to inoperable to support testing

Classification: 2) Consistency/Standardization

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

Description:

Add a Note to LCO 3.9.5, "SDC and Coolant Circulation - Low Water Level" which states, "One SDC loop may be inoperable for <= 2 hours for surveillance testing provided the other SDC loop is OPERABLE and in operation."

Justification:

LCO 3.9.5 currently does not allow the non-operating SDC loop to be made inoperable to support surveillance testing. LCOs 3.4.7 and 3.4.8 both allow the non-operating SDC loop to be inoperable for a period of up to 2 hours to perform surveillance testing, provide the other SDC loop is OPERABLE and operating. For consistency, and to support required outage activities and still maintain the plant in a safe condition, this Note should be added to LCO 3.9.5.

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Revision History

OG Revision 0 **Revision Status: Active** **Next Action: NRC**

Revision Proposed by: CEOG

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 27-Jul-99

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 27-Jul-99

TSTF Review Information

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

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

TSTF Comments:

Applicable to PWRs only.

TSTF Resolution: Approved Date: 14-Dec-99

NRC Review Information

NRC Received Date: 23-Dec-99

NRC Comments:

(No Comments)

Final Resolution: NRC Action Pending Final Resolution Date:

Incorporation Into the NUREGs

File to BBS/LAN Date: TSTF Informed Date: TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

LCO 3.9.5	DHR and Coolant Circulation - Low Water Level	NUREG(s)- 1430 Only
LCO 3.9.5 Bases	DHR and Coolant Circulation - Low Water Level	NUREG(s)- 1430 Only
LCO 3.9.6	RHR and Coolant Circulation - Low Water Level	NUREG(s)- 1431 Only
LCO 3.9.6 Bases	RHR and Coolant Circulation - Low Water Level	NUREG(s)- 1431 Only
LCO 3.9.5	SDC and Coolant Circulation - Low Water Level	NUREG(s)- 1432 Only
LCO 3.9.5 Bases	SDC and Coolant Circulation - Low Water Level	NUREG(s)- 1432 Only

INSERT 1

---------- NOTE ----------
One required DHR loop may be inoperable for up to 2 hours for surveillance testing, provided that the other DHR loop is OPERABLE and in operation.

INSERT 2

This LCO is modified by a Note that allows one DHR loop to be inoperable for a period of 2 hours provided the other loop is OPERABLE and in operation. This permits periodic surveillance tests to be performed on the inoperable loop during a time when these tests are safe and possible.

INSERT 3

---------- NOTE ----------
One required RHR loop may be inoperable for up to 2 hours for surveillance testing, provided that the other RHR loop is OPERABLE and in operation.

INSERT 4

This LCO is modified by a Note that allows one RHR loop to be inoperable for a period of 2 hours provided the other loop is OPERABLE and in operation. This permits periodic surveillance tests to be performed on the inoperable loop during a time when these tests are safe and possible.

INSERT 5

---------- NOTE ----------
One required SDC loop may be inoperable for up to 2 hours for surveillance testing, provided that the other SDC loop is OPERABLE and in operation.

INSERT 6

This LCO is modified by a Note that allows one SDC loop to be inoperable for a period of 2 hours provided the other loop is OPERABLE and in operation. This permits periodic surveillance tests to be performed on the inoperable loop during a time when these tests are safe and possible.

3.9 REFUELING OPERATIONS

3.9.5 Decay Heat Removal (DHR) and Coolant Circulation—Low Water Level

LCO 3.9.5 Two DHR loops shall be OPERABLE, and one DHR loop shall be in operation.

Insert 1 →

APPLICABILITY: MODE 6 with the water level < 23 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Less than required number of DHR loops OPERABLE.	A.1	Initiate action to restore DHR loop to OPERABLE status.	Immediately
	OR		
	A.2	Initiate action to establish ≥ 23 ft of water above the top of reactor vessel flange.	Immediately
B. No DHR loop OPERABLE or in operation.	B.1	Suspend operations involving a reduction in reactor coolant boron concentration.	Immediately
	AND		
	B.2	Initiate action to restore one DHR loop to OPERABLE status and to operation.	Immediately
	AND		
			(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

reduction. Therefore, the DHR System is retained as a Specification.

LCO

In MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, two DHR loops must be OPERABLE. Additionally, one DHR loop must be in operation to provide:

a. Removal of decay heat;

b. Mixing of borated coolant to minimize the possibility of criticality; and

Insert 2

c. Indication of reactor coolant temperature.

An OPERABLE DHR loop consists of a DHR pump, a heat exchanger, valves, piping, instruments, and controls to ensure an OPERABLE flow path and to determine the low end temperature. The flow path starts in one of the RCS hot legs and is returned to the RCS cold legs.

APPLICABILITY

Two DHR loops are required to be OPERABLE, and one in operation in MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, to provide decay heat removal. Requirements for the DHR System in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System (RCS), and Section 3.5, Emergency Core Cooling Systems (ECCS). DHR loop requirements in MODE 6, with the water level ≥ 23 ft above the top of the reactor vessel flange, are located in LCO 3.9.4, "Decay Heat Removal (DHR) and Coolant Circulation—High Water Level."

ACTIONS

A.1 and A.2

With fewer than the required loops OPERABLE, action shall be immediately initiated and continued until the DHR loop is restored to OPERABLE status or until ≥ 23 ft of water level is established above the reactor vessel flange. When the water level is established at ≥ 23 ft above the reactor

(continued)

3.9 REFUELING OPERATIONS

3.9.6 Residual Heat Removal (RHR) and Coolant Circulation—Low Water Level

LCO 3.9.6 Two RHR loops shall be OPERABLE, and one RHR loop shall be in operation.

Insert 3 →

APPLICABILITY: MODE 6 with the water level < 23 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Less than the required number of RHR loops OPERABLE.	A.1 Initiate action to restore required RHR loops to OPERABLE status. OR A.2 Initiate action to establish ≥ 23 ft of water above the top of reactor vessel flange.	Immediately Immediately
B. No RHR loop in operation.	B.1 Suspend operations involving a reduction in reactor coolant boron concentration. AND	Immediately (continued)

BASES

LCO (continued)

Additionally, one loop of RHR must be in operation in order to provide:

a. Removal of decay heat;

b. Mixing of borated coolant to minimize the possibility of criticality; and

Insert 4

c. Indication of reactor coolant temperature.

An OPERABLE RHR loop consists of an RHR pump, a heat exchanger, valves, piping, instruments and controls to ensure an OPERABLE flow path and to determine the low end temperature. The flow path starts in one of the RCS hot legs and is returned to the RCS cold legs.

APPLICABILITY

Two RHR loops are required to be OPERABLE, and one RHR loop must be in operation in MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, to provide decay heat removal. Requirements for the RHR System in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System (RCS), and Section 3.5, Emergency Core Cooling Systems (ECCS). RHR loop requirements in MODE 6 with the water level ≥ 23 ft are located in LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation—High Water Level."

ACTIONS

A.1 and A.2

If less than the required number of RHR loops are OPERABLE, action shall be immediately initiated and continued until the RHR loop is restored to OPERABLE status and to operation or until ≥ 23 ft of water level is established above the reactor vessel flange. When the water level is ≥ 23 ft above the reactor vessel flange, the Applicability changes to that of LCO 3.9.5, and only one RHR loop is required to be OPERABLE and in operation. An immediate Completion Time is necessary for an operator to initiate corrective actions.

(continued)

3.9 REFUELING OPERATIONS

3.9.5 Shutdown Cooling (SDC) and Coolant Circulation—Low Water Level

LCO 3.9.5 Two SDC loops shall be OPERABLE, and one SDC loop shall be in operation.

Insert 5 →

APPLICABILITY: MODE 6 with the water level < 23 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SDC loop inoperable.	A.1 Initiate action to restore SDC loop to OPERABLE status. OR A.2 Initiate action to establish ≥ 23 ft of water above the top of reactor vessel flange.	Immediately Immediately
B. No SDC loop OPERABLE or in operation.	B.1 Suspend operations involving a reduction in reactor coolant boron concentration. AND B.2 Initiate action to restore one SDC loop to OPERABLE status and to operation. AND	Immediately Immediately (continued)

BASES (continued)

LCO

In MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, both SDC loops must be OPERABLE. Additionally, one loop of the SDC System must be in operation in order to provide:

a. Removal of decay heat;

b. Mixing of borated coolant to minimize the possibility of a criticality; and

Insert 6

c. Indication of reactor coolant temperature.

An OPERABLE SDC loop consists of an SDC pump, a heat exchanger, valves, piping, instruments, and controls to ensure an OPERABLE flow path and to determine the low end temperature. The flow path starts in one of the RCS hot legs and is returned to the RCS cold legs.

APPLICABILITY

Two SDC loops are required to be OPERABLE, and one SDC loop must be in operation in MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, to provide decay heat removal. Requirements for the SDC System in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System. MODE 6 requirements, with a water level ≥ 23 ft above the reactor vessel flange, are covered in LCO 3.9.4, "Shutdown Cooling and Coolant Circulation—High Water Level."

ACTIONS

A.1 and A.2

If one SDC loop is inoperable, action shall be immediately initiated and continued until the SDC loop is restored to OPERABLE status and to operation, or until ≥ 23 ft of water level is established above the reactor vessel flange. When the water level is established at ≥ 23 ft above the reactor vessel flange, the Applicability will change to that of LCO 3.9.4, "Shutdown Cooling and Coolant Circulation—High Water Level," and only one SDC loop is required to be OPERABLE and in operation. An immediate Completion Time is necessary for an operator to initiate corrective actions.

(continued)